RADCLIFFE CATALOGUE

OF

1772 STARS

FOR THE EPOCH

1900

RAMBAUT

Dupl.

THE

RADCLIFFE CATALOGUE OF STARS

FOR

1900.

OXFORD: HORACE HART, M.A.
PRINTER TO THE UNIVERSITY

CATALOGUE

OF

1772 STARS,

CHIEFLY COMPRISED WITHIN THE ZONE 85°–90° N.P.D.,

FOR THE EPOCH

1900,

Oxford, Eng. - Univ. -

DEDUCED FROM OBSERVATIONS MADE AT THE RADCLIFFE OBSERVATORY, OXFORD,

DURING THE YEARS

1894—1903.

UNDER THE DIRECTION OF

ARTHUR A. RAMBAUT, M.A. (DUBL. ET OXON.),

D.SC., F.R.S., F.R.A.S., M.R.I.A.,

RADCLIFFE OBSERVER, OXFORD.

PUBLISHED BY ORDER OF THE RADCLIFFE TRUSTEES.

OXFORD:

HENRY FROWDE, M.A.: 116 HIGH STREET.

LONDON: OXFORD UNIVERSITY PRESS WAREHOUSE, AMEN CORNER, E.C.

ALSO AT EDINBURGH, GLASGOW, NEW YORK, AND TORONTO.

1906.

THE RADCLIFFE TRUSTEES, 1906.

ERRATA

IN THE RADCLIFFE CATALOGUES OF STARS FOR 1845, 1860, AND 1890.

All known errors except such as have been published in the first two Radcliffe Catalogues are given in the following lists. Some of these have already appeared as *errata* in the volumes of *Radcliffe Observations*.

Radcliffe Catalogue of 6317 Stars for 1845·0.

Page.	No.	Column.	For	Read
26	421	Mean R.A. (R.)	$1^h\ 14^m\ 27^s{\cdot}64$	$1^h\ 14^m\ 28^s{\cdot}26$
37	616	Mean N.P.D. (R.)	$11°\ 33'\ 18''{\cdot}0$	$11°\ 33'\ 15''{\cdot}5$
48	826	Mean R.A. (R.)	$2^h\ 44^m\ 41^s{\cdot}98$	$2^h\ 44^m\ 41^s{\cdot}00$
49	823	Mean N.P.D. (R.)	$43°\ 12'$	$42°\ 58'$
52	884	Precession	$+3^s{\cdot}998$	$+3^s{\cdot}988$
64	1103	Magnitude	7·5	5·0
"	"	Estimates of Magnitude	3	1
"	"	Number of Observations R.A.	3	1
"	"	Mean Year (R.)	57·0	56·0
70	1200	Mean R.A. (R.)	$4^h\ 10^m\ 3^s{\cdot}59$	$4^h\ 10^m\ 4^s{\cdot}57$
92	1594	Mean R.A. (R.)	$5^h\ 47^m\ 30^s{\cdot}88$	$5^h\ 47^m\ 29^s{\cdot}88$
108	1876	Mean R.A. (R.)	$6^h\ 54^m\ 30^s{\cdot}37$	$6^h\ 54^m\ 32^s{\cdot}37$
109	1876	Ordinal Number	1676	1876
124	2154	Magnitude	8·9	9·1
"	"	Estimates of Magnitude	4	3
"	"	Mean R.A. (R.)	$8^h\ 21^m\ 6^s{\cdot}50$	$8^h\ 21^m\ 6^s{\cdot}36$
"	"	Number of Observations R.A.	4	3
"	"	Mean Year (R.)	52·1	54·1
124	2155	Magnitude	9·0	8·7
"	"	Estimates of Magnitude	2	3
"	"	Mean R.A. (R.)	$8^h\ 21^m\ 7^s{\cdot}20$	$8^h\ 21^m\ 7^s{\cdot}07$
"	"	Number of Observations R.A.	1	2
"	"	Mean Year (R.)	52·1	49·2
127	2199	Mean N.P.D. (R.)	$42°\ 43'\ 49''{\cdot}8$	$22°\ 43'\ 49''{\cdot}8$
130	2260	Precession	$+3^s{\cdot}838$	$+3^s{\cdot}867$
"	"	Sec. Var.	$-0^s{\cdot}111$	$-0^s{\cdot}032$
138	2386	Precession	$+4^s{\cdot}143$	$+3^s{\cdot}779$
139	2386	Mean N.P.D. (R.)	$48°\ 19'\ 15''{\cdot}7$	$48°\ 19'\ 16''{\cdot}0$
144	2493	Mean R.A. (G.)	$25^s{\cdot}49$	$27^s{\cdot}49$
145	2493	Mean N.P.D. (G.)	$40°\ 23'\ 53''{\cdot}2$	$40°\ 22'\ 53''{\cdot}2$
165	2835	Mean N.P.D. (R.)	$40°\ 9'\ 16''{\cdot}3$	$40°\ 9'\ 18''{\cdot}3$
180	3128	Magnitude	7·4	7·3
"	"	Estimates of Magnitude	3	4
"	"	Mean R.A. (R.)	$13^h\ 56^m\ 47^s{\cdot}84$	$13^h\ 56^m\ 47^s{\cdot}85$
"	"	Number of Observations R.A.	3	4
"	"	Mean Year (R.)	56·4	56·6
180	3129	Delete:—Magnitude: Estimates of mag.: Mean R.A. (R.): Number of Observations and Mean Year in R.A. (R.).		
182	3180	Mean R.A. (R.)	$14^h\ 11^m\ 50^s{\cdot}22$	$14^h\ 11^m\ 50^s{\cdot}29$
208	3635	Mean R.A. (R.)	$16^h\ 54^m\ 23^s{\cdot}44$	$16^h\ 54^m\ 23^s{\cdot}22$
215	3740	Names	69 Ophiuchi β	60 Ophiuchi β

Radcliffe Catalogue of 6317 Stars for 1845·0 (*continued*).

Page.	No.	Column.	For	Read
218	3807	Mean R.A. (R.)	$17^{h}\ 55^{m}\ 4^{s}{\cdot}72$	$17^{h}\ 55^{m}\ 4^{s}{\cdot}34$
230	4013	Precession	$+2^{s}{\cdot}162$	$+1^{s}{\cdot}162$
232	4031	Precession	$+1^{s}{\cdot}966$	$+1^{s}{\cdot}998$
247	4271	Adopted P.M.	$+0''{\cdot}09$	$-0''{\cdot}09$
295	5111	Precession	$+14''{\cdot}24$	$-14''{\cdot}24$
312	5438	Mean R.A. (R.)...	$21^{h}\ 46^{m}\ 46^{s}{\cdot}24$	$21^{h}\ 46^{m}\ 46^{s}{\cdot}08$
„	„	Number of Observations R.A.	4	3
„	„	Mean Year (R.)	46·4	46·2
312	5439	Mean R.A. (R.)	$21^{h}\ 46^{m}\ 46^{s}{\cdot}56$	$21^{h}\ 46^{m}\ 46^{s}{\cdot}58$
„	„	Number of Observations R.A.	4	5
„	„	Mean Year (R.)	48·5	48·1
313	5431	Mean N.P.D. (R.)	$25^{\circ}\ 29'\ 19''{\cdot}3$	$25^{\circ}\ 29'\ 22''{\cdot}9$
316	5522	Mean R.A. (R.)	$21^{h}\ 56^{m}\ 32^{s}{\cdot}61$	$21^{h}\ 56^{m}\ 33^{s}{\cdot}29$
341 .	...	Sec. Var. and Adopted P.M. headings should be interchanged.		
347	6044	Mean N.P.D. (R.)	$39^{\circ}\ 19'\ 53''{\cdot}2$	$32^{\circ}\ 19'\ 53''{\cdot}2$
351	6100	Mean N.P.D. (R.)	$46^{\circ}\ 46'\ 52''{\cdot}5$	$46^{\circ}\ 46'\ 57''{\cdot}5$
354	6190	Precession	$-2^{s}{\cdot}871$	$+2^{s}{\cdot}871$
359	6236	Mean N.P.D. (R.)	$39^{\circ}\ 22'\ 20''{\cdot}8$	$39^{\circ}\ 32'\ 20''{\cdot}8$

Radcliffe Catalogue of 2386 Stars for 1860·0.

Page.	No.	Column.	For	Read
27	440	Mean N.P.D.	$93^{\circ}\ 22'\ 18''{\cdot}4$	$93^{\circ}\ 22'\ 18''{\cdot}0$
„	„	Mean Year...	59·5	59·0
„	„	Number of Observations ...	4	5
54 & 55	931	Name of Star	*	Oeltz. Arg. (N.Z.) 9703
54 & 55	932	Name of Star	Oeltz. Arg. (N.Z.) 9703	Oeltz. Arg. (N.Z.) 9704
92	1581	Annual P.M. in R.A.	$+0^{s}{\cdot}023$	$+0^{s}{\cdot}006$

Radcliffe Catalogue of 6424 Stars for 1890·0.

Page.	No.	Column.	For	Read
ix	...	*dα* 1891	$+0^{s}{\cdot}100$	$+0^{s}{\cdot}085$
„	...	*dΔ* „	$-0''{\cdot}339$	$-0''{\cdot}240$
„	...	*dω* „	$-0''{\cdot}232$	$+0''{\cdot}266$
10	196	Mean R.A....	$0^{h}\ 50^{m}\ 38^{s}{\cdot}795$	$0^{h}\ 50^{m}\ 38^{s}{\cdot}807$
„	„	Proper Motion	$+0^{s}{\cdot}0005$	$+0^{s}{\cdot}0050$
60	1314	Constellation	Orionis 8	Orionis ... ...
„	„	Magnitude...	Var.	8–7
„	„	Delete the first footnote.		
126	2810	Constellation	Sextantis	Sextantis
179	3995	Lalande, 1800	28 09	28209
183	4055	Sec. Var.	$-0''{\cdot}394$	$-0''{\cdot}404$
231	5141	Mean N.P.D.	$90^{\circ}\ 27'\ 35''{\cdot}00$	$90^{\circ}\ 27'\ 35''{\cdot}73$
„	„	Delete the Proper Motion (vide *Astronomical Journal* 422)		
232	...	Second footnote	5190	5189

INTRODUCTION.

THE present Catalogue of Stars contains the results of observations made with the transit circle of the Radcliffe Observatory between the years 1894 and 1903, both inclusive. During those years many things occurred to interrupt the progress of the work, and more than once it was unavoidably laid aside altogether for considerable periods of time. In the years 1894 and 1895 very little was done beyond observing some clock stars, whose places appear in the catalogue, and redetermining the positions of a few stars included in the *Radcliffe Catalogue for* 1890. The observations of the year 1903 were almost entirely confined to clock stars, reflexion observations, and a few working list stars at wide intervals which had previously eluded observation. Regular systematic observations began in March, 1896. The death of my predecessor—Mr. E. J. Stone, F.R.S.—which occurred on May 9 in the following year, naturally caused some interruption, and though systematic work was recommenced soon after my appointment in the following July as Radcliffe Observer, several other causes conspired to delay the work, such as the erection of the chronograph and various experiments which were found necessary before it could be brought into regular use, alterations and improvements in the transit circle itself which will be described below, extensive repairs to the building of the Observatory, and of late years the work with the New Double Equatorial (of 24 inches and 18 inches aperture) erected in 1902, which drew off a good deal of the attention of the staff from the transit circle work. But, although in consequence the number of stars included in the catalogue is small in proportion to the length of time over which the work has extended, these interruptions have not been allowed in any way to impair the precision of the results, and at all times the observations have been made with the most scrupulous care, and nothing conducive to accuracy which skill or experience in the use of the instrument could suggest has been omitted. The results are consequently of a high order of accuracy, as is shown by the tests which have been applied and which are described in the section of this Introduction entitled 'Accuracy of the Results'.

Shortly after the publication of the *Radcliffe Catalogue for* 1890, a new working list was compiled by Stone. The 1890 Catalogue was intended to contain all stars down to the seventh magnitude from the equator to 115° N.P.D., with fainter stars where *lacunae* occurred, and it included many stars south of 115° N.P.D. for comparison with the places of the Cape Catalogue, 1880. The new working list extended the Radcliffe zone of observation from the equator to 85° N.P.D. It also included those stars of Dr. Downing's list of 834 Zodiacal Stars—published as an appendix to the *Nautical Almanac* for 1897—which had not been included in the *Radcliffe Catalogue for* 1890. To this list a small number of stars in various parts of the sky were subsequently added, e.g. Greenwich clock stars, some *Nautical Almanac* stars which are not clock stars, azimuth stars, comet comparison stars, and various stars observed by request for proper motion or for other reasons.

The present catalogue gives the position of every star down to the seventh magnitude contained in the zone 85°—90° N.P.D. with very few exceptions, and these occur only in the case of double or multiple systems. In it will also be found the position of every star in Dr. Downing's Zodiacal list which has not been already included in the Radcliffe Catalogue for 1890, with one exception, viz. the star described in that list as D.M. + 27°, 725. It is clear that the magnitude given for this star is in error. A star at the given position has been observed at Oxford on four different occasions, and its magnitude has been estimated as about 9·7. In the list of *errata* published in volume vi of Argelander's *Astronomische Beobachtungen zu Bonn*, p. 378, the following correction is given as applying to this star: 'Gr. statt 5·9 lese man 9·5'.

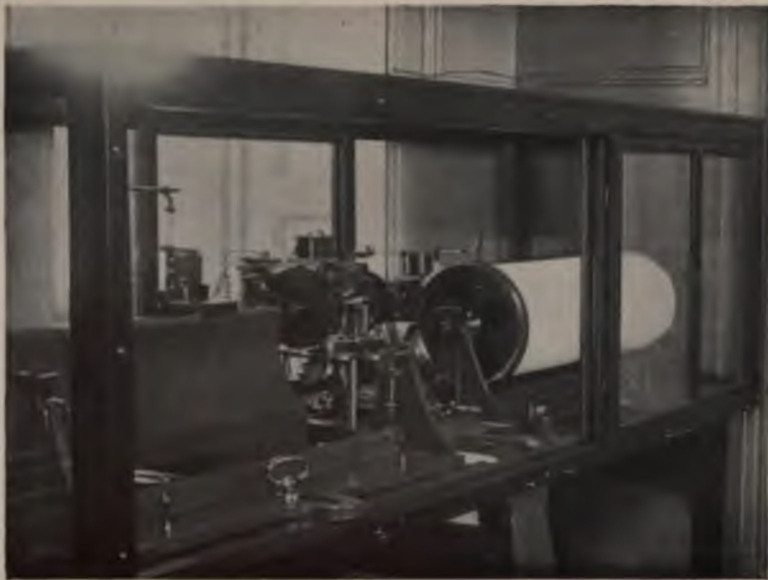

Fig. 1.—The Chronograph.

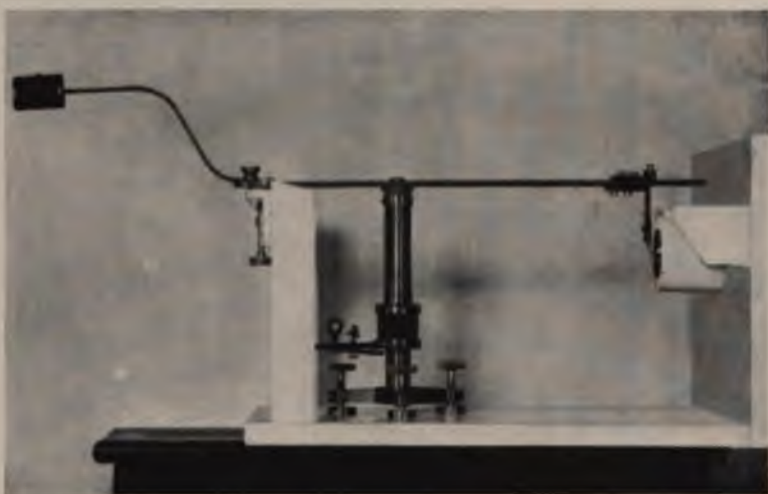

Fig. 3.—Apparatus as arranged for the Vertical Co-ordinate.

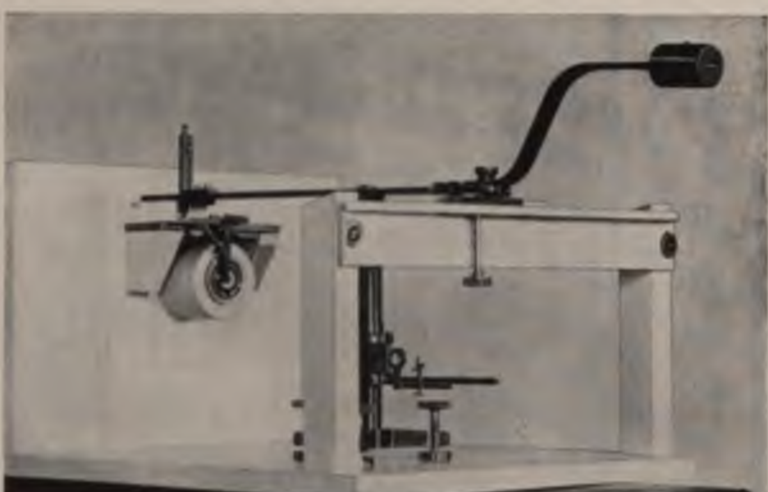

Fig. 4.—Apparatus as arranged for the Horizontal Co-ordinate.

To face page ix.

THE TRANSIT CIRCLE AND CHRONOGRAPH.

Transit Circle.—The instrument with which the observations have been made is the same as that used in the formation of Stone's *Radcliffe Catalogue for* 1890. It was constructed by Messrs. Troughton and Simms for Mr. R. C. Carrington, and was used by the latter at his Observatory at Redhill in compiling his catalogue of circumpolar stars. A somewhat detailed description of the instrument as used by him with a drawing made to scale will be found in the Introduction to Carrington's Redhill Catalogue. It is only necessary here to refer to this description in order to correct a curious error with regard to the dimensions of the circle which, although of slight importance, is worth setting right. It is there stated that the circle is 42 inches in diameter, but careful measurements recently made show that the outer edge is barely 40 inches in diameter, and the circle through the middle of the gold band on which the division lines are traced is as nearly as possible 39 inches in diameter.

An account of the erection of the instrument at Oxford and of some slight alterations then made in it is given by Main in the introduction to the *Radcliffe Observations* for 1862. Chief amongst these was the addition of four microscopes to those used by Carrington. The latter, which are denoted by the letters *A*, *B*, *C*, and *D* engraved upon them, had been placed, two of them at the ends of a horizontal diameter and two at the ends of a vertical diameter. The four new microscopes, denoted by the letters *a*, *b*, *c*, and *d*, were placed at the ends of two diameters, making angles of 45° with the vertical. The latter have been used exclusively ever since in ordinary star observations.

In the volume of *Radcliffe Observations* for 1880 will be found a reference to some improvements in the instrument effected by Mr. Stone before commencing the observations of stars included in his *Radcliffe Catalogue for* 1890. On the completion of that work he again overhauled and examined the instrument, but no structural change of importance was made except the substitution of a new breech which was provided with a screw motion in declination for the eyepiece slide, and a cover to protect the head of the R.A. micrometer when set at a fixed reading. The instrument was carefully cleaned, repainted, and readjusted before beginning observations of the stars included in the present catalogue. At this time two new wires were inserted and the equatorial intervals of the whole reticule determined from a large number of transits. The inclination of the horizontal wire was also examined at this time, and at frequent intervals during the whole course of observations. On July 26, 1888, a change was made in the mode of lighting, electric lamps being substituted for gas in the illumination of the wires, microscopes, collimators, Bohnenberger Nadir eyepiece, and clock face. This was undoubtedly a great improvement, getting rid, as it practically did, of all sources of heat from the Transit Circle room except the observer himself and a small hand-lantern used for reading with.

Shortly after assuming the charge of the Radcliffe Observatory, my attention was directed to the question of the stability of this instrument; and, on examining its foundations, I found that the two piers stood on a single solid mass of masonry, whilst two extensions of this in the form of a very solid wall running north and south formed the foundation for the piers on which the collimators rest. The floor of the observing room in the space between the four piers consisted of large flagstones which were in contact at the same time with the piers and the oaken floor beyond the piers. These were removed and replaced by an oaken floor completely independent of the piers and their foundations. Two small brick piers were at the same time built to support the weight of the other parts of the floor. In this way the telescope piers were entirely isolated. At the same time a change was made in the mode of supporting the mercury trough used for reflexion observations of stars. Up to that time it had always been placed on a wooden carriage running on the stone floor. In order to suspend it entirely on the piers themselves, the following method was adopted. A ledge of oak was bolted to the face of each pier about 3 feet 7 inches below the axis of the instrument. A plank of wood was then provided, of such a length that it just reached from one ledge to the other, and was furnished with india-rubber stucks or buttons, on which it rested. On the face of each of the collimator piers a similar ledge was attached. Another plank was also provided, which for reflexion

observations of southern stars was placed so that one end bore on the oaken ledge attached to the south collimator pier, and the other end on the first plank. For observations of northern stars the plank was placed so as to bear on the ledge of the north collimator pier. Thus in either case we were provided with a horizontal shelf resting wholly on the isolated piers, at any part of which the mercury trough could be placed. At the same time a circular trough was substituted for the rectangular one previously used in reflexion observations, and a distinct improvement was found to result in the character of the star images. This apparatus was found to work very satisfactorily, and the tremors previously experienced in reflexion observations were thereby considerably reduced. A rectangular copper trough, with amalgamated bottom resting on the isolated pier below the floor, continued to be used for the Nadir determinations. In these observations a distinct improvement in the steadiness of the reflected image of the wire resulted from the complete isolation of the piers. At about the same time the piers supporting the standard sidereal clock, and those on which the north and south collimators rest, were completely isolated from the floor.

While these changes were being carried out it was decided to retain the old arrangement by which the observer, when using the micrometer of either collimator, stood on a stone slab, which, though isolated from the floor, was built into the solid base of the collimator pier. This was a little unfortunate, since to this cause was subsequently traced a very small uncertainty in determining the flexure correction. It was not till June, 1902, however, that this was discovered, but attention having been directed to it, the stone slabs were removed and replaced by wooden bridges bearing on the oaken floor.

Collimators.—While we were engaged in carrying out these alterations it was found that the axis of the north collimator stood about three-quarters of an inch above the axis of rotation of the transit circle itself, that of the south collimator being too high by about half that amount. Accordingly the Y-bearings on which the collimators rest were sunk deeper into the piers, so that all three instruments now stand at the same level. To avoid sudden changes of temperature the collimators were, at the same time, enclosed in wooden cases, leaving only the eyepieces projecting.

In July, 1898, I met the Radcliffe Trustees for the first time after assuming the duties of Radcliffe Observer, and was by them authorized to carry out some improvements in connexion with this instrument which seemed to me to be desirable. I was thus enabled to obtain from Sir Howard Grubb an electric chronograph, and from Messrs. Troughton & Simms a new and improved breech-piece for the telescope.

Breech-piece.—This is fitted with two slides at right angles to each other. The first—the R.A. slide—carries the reticule of vertical wires, and is connected with a micrometer screw, the head of which is divided to 100 parts, and is furnished with an apparatus for counting the number of whole revolutions. It is also provided with a cover which protects the head from accidental displacements, and which can be turned back out of the way when the screw is in use.

The horizontal wire is attached to a separate slide actuated by another micrometer screw. This screw, in addition to the usual divided head, is furnished with a steel drum on which the divisions and numbers are embossed. Another embossed wheel for counting whole revolutions of the micrometer is also provided. By this means the entire reading of the micrometer is impressed on a paper strip which is wound from one reel to another. The impression is made by simply turning a milled head through about a quarter of a revolution.

The eyepiece is carried on two slides at right angles to each other, each of which is actuated by a rapid screw. The whole micrometer is mounted on a cylindrical tube which fits firmly in another cylinder rigidly attached to the conical tube of the telescope, and very fine adjustments both in focus and position by means of opposing screws are provided.

Chronograph.—The chronograph is of Sir Howard Grubb's latest pattern, and is similar in its main features to those supplied by him to the Cape of Good Hope Observatory and to the Perth

[illegible]

[illegible] Co-ordinate.

[illegible] Horizontal Co-ordinate.

and the error committed is the difference between one or other of these expressions and t. The error is therefore

$$\text{(i)}\ \frac{(v-v')(1-\tau)t}{(v-v')\tau+v'} \quad \text{or} \quad \text{(ii)}\ \frac{(v-v')\tau(1-t)}{(v-v')\tau+v'}.$$

In the first case t is less than τ, and in the second $1-t$ is less than $1-\tau$, and therefore in either case the error is less than

$$\frac{(v-v')\tau(1-\tau)}{(v-v')\tau+v'} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \qquad (\alpha)$$

In the Grubb control the differential gearing is such that $v-v' = \pm v/30$, and therefore the error committed is less than

$$\frac{\tau(1-\tau)}{\tau+29} \quad \text{or} \quad \frac{\tau(1-\tau)}{\tau-31},$$

according as the retarder or accelerator is brought into action. Hence we see that the greatest error which could be introduced from this cause occurs when

$$\tau = 0^s{\cdot}4958, \quad \text{or} \quad 0^s{\cdot}5041,$$

and is therefore in any case less than

$$0^s{\cdot}0085,$$

a negligible quantity in a single wire transit. But when, as at the Radcliffe Observatory, the same relay works both the pen-, and the control-, circuits the error is very much less than this. For with the existing arrangement the corrector, when it acts, comes down sharply within an inappreciable fraction of a second of the clock dot, so that the value of the expression (α) is sensibly zero. But even allowing for a little possible delay on the part of the barrel in taking up the corrected speed, due to such causes as back-lash or inertia (though I can find no trace of any sensible delay of this kind), the value of τ can hardly amount to as much as $0^s{\cdot}1$. Putting this value for τ in the expression (α), the greatest possible error on this extravagant hypothesis is found to be *less* than

$$\frac{0^s{\cdot}1 \times 0{\cdot}9}{29{\cdot}1} = 0^s{\cdot}0031,$$

which is of course quite inappreciable.

In the above discussion the motion of the barrel between two *consecutive* clock beats is considered. But the sixtieth second of each minute is not recorded, and consequently the circumstances in the interval between the fifty-ninth second of one minute and the first second of the next are slightly different from those contemplated. By similar reasoning it is, however, easy to show that in this case the error committed in measuring the sheet on the assumption of uniform motion is *less* than

$$\frac{(v-v')(2-\tau)\tau}{(v-v')\tau+2v'}; \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \qquad (\beta)$$

or with the given values of $v-v'$ it is less than

$$\frac{\tau(2-\tau)}{\tau+58} \quad \text{or} \quad \frac{\tau(2-\tau)}{\tau-62}.$$

Putting $\tau = 0{\cdot}1$ as before, we find the error is in either case less than $0^s{\cdot}0033$.

A general view of the chronograph with one barrel removed is shown in the Plate, Fig. 1.

Pivot Error.

Shortly after the charge of the Radcliffe Observatory came into my hands, I examined the eastern pivot of the Transit Circle with an apparatus procured by Stone for this purpose, and soon obtained evidence of the existence of appreciable errors. It thus became a matter of importance to determine the magnitude of these inequalities. The method used by Stone was suggested and described by M. Hamy of the Paris Observatory[1]. But, although exceedingly sensitive and beautifully adapted for

[1] *Bulletin Astronomique*, xii. p. 49.

detecting the existence of such errors, it does not give us the means of evaluating them; and it was, therefore, necessary to devise other means of attacking this problem.

The method finally adopted is a modification of Hamy's. It is fully described in a paper published in the *Monthly Notices* of the Royal Astronomical Society, Vol. lxv. p. 56, to which reference may be made for further details. The pivots are of steel, 3 inches in diameter, and perforated by holes 1·75 inches in diameter. A light plug of brass was inserted in the opening of each pivot, fitting tightly, but without strain in the aperture. In each plug was firmly fixed a very carefully turned pin of hardened steel of about 1 mm. diameter. A lever L (Fig. 2), movable about a horizontal axis a fixed to the pier of the telescope, carried near its other extremity a small bracket terminating in a knife-edge of hardened steel, which rested on the pin. This lever supported a small horizontal mirror m of black glass at a convenient distance from the fulcrum a. The mirror stood above and very close to the upper plane face of the lens l of a bent collimator provided with three levelling screws which rested on the pier. At the focus of the lens l was placed a small total-reflexion prism d, which was illuminated from the side with monochromatic light by means of a condensing lens. When this prism was adjusted so that light entered the collimator, interference fringes were produced in the lamina between the mirror m and the lens l as soon as their plane faces were brought into sensible parallelism. An eye placed at E, on looking at the lens l as reflected in the prism D, would then see these fringes at one side of the prism d.

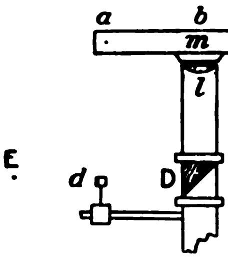

Fig. 2.

Any movement of the knife-edge in a vertical direction, due either to irregularities of the pivot or of the pin, or to an eccentric position of the pin, could thus be measured by the changes in the interference fringes as seen in the collimator when the telescope was rotated.

For determining the horizontal movements a further piece of apparatus had to be provided. For observing these a crank-lever, as shown in the Plate, Fig. 4, was pivoted on a fixed centre vertically above the pin. The arms of this lever were perpendicular to each other, and each carried a hardened steel straight-edge, of which one, the vertical, bore against the pin, whilst the other, the horizontal, supported the knife-edge and lever L. These two straight-edges were set accurately at right angles to each other, and so that, if produced, the straight lines which they determine would intersect at the centre on which the lever turns. They were also graduated so that the knife-edge of the lever L could be set at exactly the same distance from this centre as the pin. Any small horizontal displacement of the latter was thus converted into an equal vertical movement of the lever L, and could be observed in the same way as the vertical movements of the pin.

The arrangement of the apparatus as finally employed for measuring both the vertical and horizontal displacement is shown in the Plate, Figs. 3 and 4. For the purpose of these illustrations the instrument was mounted on a wooden frame carrying a wooden model of the pivot, as it was found impossible to photograph the apparatus *in situ*.

There are two possible sources of error against which it is necessary to guard in the use of this method. These are (1) errors in the figure of the pins themselves, and (2) a want of absolute accuracy in the parallelism or alignment of the two pins. Let us consider these two sources of error separately.

(1) *Errors in the figure of the pins.* As any deviation from the exactly circular form in that section of a pin on which the knife-edge bears will affect with its full force all observations made with it, the pins must be selected with all possible care. The figure of each pin must be critically examined before using it, and fortunately for this purpose, we have in an application of Monsieur Hamy's method a test which leaves nothing to be desired.

On the slide-rest of a small lathe was mounted a frame known as a 'watchmaker's turn'. One of the centres of this was of the ordinary form, consisting of a small drilled hole. The other was of brass in the form of a very small Y-bearing in which the pin turned (see y, Fig. 5). To the hand-rest of the lathe was firmly attached a brass block carrying the opposing screws which form the fulcrum a of the lever L, and the knife-edge attached to the lever was allowed to rest on the pin immediately above the Y-bearing.

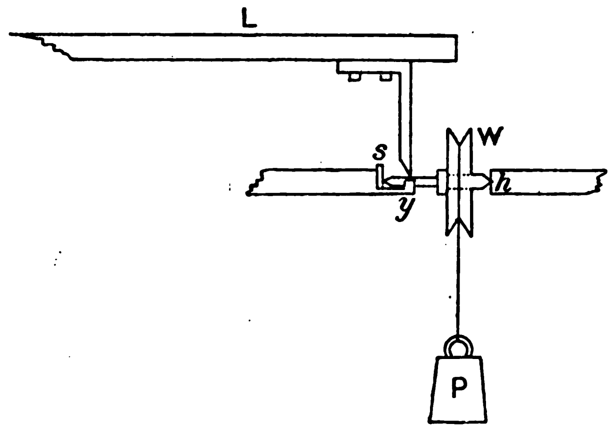

Fig. 5.

With this apparatus inequalities which did not exceed a small fraction of a wave-length of sodium light could be detected. From a number of pins two were selected in this way whose errors were practically negligible, and with these all the observations used in determining pivot errors were made.

(2) *Effect of an inclination of the pin to the axis of the telescope.* In the paper referred to above, the magnitude of the error which can arise from this cause is discussed, and it is there shown that if the pin is adjusted with any reasonable care to parallelism with the axis of the instrument the error is of quite negligible dimensions.

In the original paper the effect of the personality of the observer is considered and found to be practically zero, and an illustration is given of the remarkable agreement between the different series of observations, which it is unnecessary to reproduce here.

In deducing the errors of the pivots from measures of the vertical and horizontal displacements of the pin as the pivot is rotated, I have followed the method described in a memoir by Villarceau entitled 'Étude du mouvement de Rotation de la Lunette Méridienne,' published in the *Annales de l'Observatoire de Paris*, Mémoires, vii. p. 307.

The measured coordinates to any arbitrary origin of the centre of the pin attached to the eastern pivot being denoted by ξ and η, and those of the western pin by ξ' and η' (ξ and ξ' being measured positively towards the south, η and η' positively towards the zenith), we take

$$x = \xi' - \xi \quad \text{and} \quad y = \eta' - \eta.$$

Then, the observations being made at N different settings which divide exactly the circumference of the circle, we determine p and q from the equations

$$p = \frac{1}{N}\,\Sigma x \quad \text{and} \quad q = \frac{1}{N}\,\Sigma y.$$

If ζ denote the zenith distance of the point toward which the telescope is directed, which is measured positively towards the south and continuously through 360°, and if R denote the length of the axis of the telescope between the measured points expressed in the same units as ξ, η, &c., we have N equations of the form

$$P = \{(x-p)\sin\zeta + (y-q)\cos\zeta\}\,/R\sin 1''.$$

We have next to take the mean, P_m, of all the separate values of P. Thus

$$P_m = \frac{1}{N}\cdot\Sigma P;$$

and finally we have N equations of the form

$$\delta c = P - P_m,$$

from which the separate values of δc are deduced, i.e. the variable part of the collimation depending on pivot errors.

The observations being expressed in 'fringes', it is convenient to retain this unit throughout the computations, and to convert only the final results into angular measure. This is equivalent to neglecting the denominator, $R\sin 1''$, in the expression for P and calculating P, P_m, and δc in

terms of the same unit. To find the angular displacement of the axis corresponding to one of these units, we remark that one fringe takes the place of another when the distance between the upper surface of the collimator lens and the surface of the black glass mirror varies by half a wave-length, or when the difference in the lengths of the paths of the two interfering beams changes by a whole wave-length.

If, in Fig. 2, a is the fulcrum of the lever, b the point on it directly above the centre of the black glass mirror, and c the point directly above the knife-edge, the movement of b for a change of one fringe is half a wave-length ($\frac{1}{2}\lambda$); hence that of the knife-edge is $\frac{1}{2}\frac{ac}{ab}\cdot\lambda$, and therefore the factor required for reducing 'fringes' to seconds of arc is

$$\mu = \frac{1}{2}\frac{ac}{ab}\cdot\frac{\lambda}{R\sin 1''}.$$

From measures made on May 13, 1904, it was found that

$$R = \overset{\mathrm{mm}}{1382{\cdot}7}\,;\ ac = \overset{\mathrm{mm}}{381{\cdot}7}\,;\ \text{and } ab = \overset{\mathrm{mm}}{128{\cdot}8}.$$

In these observations sodium light was employed. We may accordingly take $\lambda = \overset{\mathrm{mm}}{0{\cdot}0005893}$, and we find that

$$\mu = 0''{\cdot}1302.$$

With this factor the results of four different series of observations of δc and the mean values corresponding to every fifth degree in the pointing of the telescope have been deduced as given in the following table.

TABLE I.

Pivot Errors of the Radcliffe Transit Circle.

N.P.D.	I.	II.	III.	IV.	Mean.
°	"	"	"	"	"
0	−0·23	−0·16	−0·05	+0·24	−0·049
5	−0·29	−0·06	−0·13	+0·25	−0·058
10	−0·20	+0·03	0·00	+0·29	+0·029
15	−0·12	+0·06	+0·04	+0·31	+0·073
20	+0·03	+0·12	+0·19	+0·29	+0·156
25	+0·38	+0·40	+0·61	+0·66	+0·513
30	+0·66	+0·70	+0·95	+0·88	+0·796
35	+0·41	+0·31	+0·60	+0·47	+0·447
40	+0·13	−0·05	+0·25	+0·06	+0·097
45	−0·08	−0·31	+0·07	−0·26	−0·143
50	−0·05	−0·44	−0·15	−0·48	−0·281
55	−0·09	−0·61	−0·35	−0·69	−0·435
60	−0·27	−0·75	−0·45	−0·92	−0·596
65	−0·26	−0·71	−0·43	−0·99	−0·598
70	−0·32	−0·72	−0·40	−1·05	−0·622
75	−0·26	−0·64	−0·42	−0·95	−0·567
80	−0·14	−0·38	−0·25	−0·94	−0·429
85	−0·14	−0·35	−0·16	−0·75	−0·351
90	−0·19	−0·21	−0·17	−0·76	−0·333
95	−0·29	−0·23	−0·19	−0·69	−0·349
100	−0·14	−0·06	−0·01	−0·59	−0·200
105	+0·05	+0·23	+0·18	−0·31	+0·037
110	+0·19	+0·43	+0·16	−0·02	+0·190
115	+0·48	+0·70	+0·49	+0·45	+0·530
120	+0·57	+1·00	+0·69	+0·69	+0·738

TABLE I (continued).

Pivot Errors of the Radcliffe Transit Circle.

N.P.D.	I.	II.	III.	IV.	Mean.
°	"	"	"	"	"
125	+0·34	+0·44	+0·34	+0·38	+0·374
130	−0·19	+0·07	−0·15	−0·06	−0·083
135	−0·60	−0·41	−0·46	−0·44	−0·478
140	−0·61	−0·35	−0·49	−0·45	−0·474
145	−0·33	−0·35	−0·27	−0·42	−0·344
150	−0·21	−0·14	−0·06	−0·21	−0·158
155	+0·09	+0·07	+0·12	+0·12	+0·101
160	+0·27	+0·15	+0·40	+0·44	+0·314
165	+0·39	+0·28	+0·60	+0·55	+0·455
170	+0·57	+0·32	+0·78	+0·72	+0·596
175	+0·66	+0·29	+0·82	+0·61	+0·593
180	+0·54	+0·29	+0·73	+0·58	+0·535
185	+0·35	+0·21	+0·55	+0·43	+0·385
190	+0·25	+0·09	+0·51	+0·36	+0·304
195	+0·23	+0·01	+0·38	+0·42	+0·257
200	+0·13	−0·07	+0·29	+0·21	+0·141
205	+0·07	−0·10	+0·12	+0·25	+0·088
210	+0·07	−0·16	+0·03	+0·22	+0·041
215	−0·07	−0·19	−0·19	+0·14	−0·078
220	−0·19	−0·30	−0·48	−0·13	−0·276
225	−0·30	−0·41	−0·82	−0·28	−0·452
230	−0·34	−0·27	−0·64	−0·18	−0·357
235	−0·13	−0·10	−0·61	+0·05	−0·197
240	−0·02	+0·16	−0·40	+0·21	−0·013
245	+0·21	+0·36	−0·19	+0·34	+0·180
250	+0·35	+0·57	−0·01	+0·38	+0·322
255	+0·51	+0·59	+0·08	+0·47	+0·412
260	+0·42	+0·61	+0·24	+0·42	+0·422
265	+0·39	+0·55	+0·29	+0·55	+0·445
270	+0·36	+0·53	+0·33	+0·34	+0·390
275	+0·47	+0·57	+0·27	+0·29	+0·399
280	+0·28	+0·38	+0·29	+0·12	+0·266
285	+0·23	+0·23	+0·10	+0·04	+0·151
290	+0·07	+0·18	−0·09	−0·14	+0·005
295	−0·10	+0·12	−0·14	−0·18	−0·076
300	−0·03	+0·02	−0·05	−0·15	−0·054
305	−0·06	+0·02	−0·07	−0·03	−0·036
310	−0·13	−0·04	−0·08	−0·17	−0·104
315	−0·27	−0·10	−0·19	−0·12	−0·172
320	−0·29	−0·31	−0·18	−0·12	−0·221
325	−0·41	−0·23	−0·32	−0·13	−0·271
330	−0·53	−0·42	−0·46	−0·16	−0·393
335	−0·55	−0·39	−0·49	−0·23	−0·414
340	−0·52	−0·39	−0·49	−0·19	−0·398
345	−0·44	−0·40	−0·45	−0·17	−0·366
350	−0·36	−0·22	−0·24	−0·01	−0·210
355	−0·30	−0·15	−0·09	+0·09	−0·112
360	−0·23	−0·16	−0·05	+0·24	−0·049

All the observations of R. A. contained in this volume have been corrected for these errors.

In the paper already quoted the mode of applying these corrections to observations which have been already published in the *Radcliffe Catalogue for* 1890 is discussed, and a table of corrections is given which is here reproduced for convenience.

TABLE II.

CORRECTIONS FOR IRREGULARITIES OF THE PIVOTS OF THE RADCLIFFE TRANSIT CIRCLE.

N.P.D.	Δα.	N.P.D.	Δα.	N.P.D.	Δα.	N.P.D.	Δα.
°	s	°	s	°	s	°	s
		−5	+0·057	+10	+0·062	+70	−0·018
−50	+0·028	4	·049	15	·060	75	·013
45	·034	3	·036	20	·067	80	−0·004
40	·041	2	+0·015	25	·115	85	+0·001
35	·048	−1	−0·030	30	·138	90	·002
30	·067	0		35	·082	95	·001
25	·078	+1	+0·095	40	·040	100	·010
20	·088	2	·054	45	·015	105	·027
15	·099	3	·037	50	+0·004	110	·036
−10	+0·076	4	·030	55	−0·008	115	·062
		+5	+0·031	60	·020	120	·079
				+65	−0·018	125	·052
						+130	+0·014

These are the corrections to be applied to all the right ascensions of the *Radcliffe Catalogue for* 1890 to free them from the effect of the irregularities of the pivots.

DIVISION ERRORS OF THE CIRCLE.

In his Introduction to the *Radcliffe Observations* for 1880 Stone writes (p. vii)—

'No proper arrangements for the determination of the division-errors were made in the original construction of the instrument. Mr. Carrington neglected the division-errors altogether; but when the instrument was mounted at Oxford the position of two of the microscopes used by Mr. Carrington was found to be inconvenient when a gas flame was employed for illumination of the field of view, and four additional microscopes were therefore mounted at equal angular distances of 90°. The readings of all eight microscopes appear to have been compared with those obtained by the use of the four new microscopes, and the differences between the results considered as the division-errors under the four microscopes. These corrections were employed in the reduction of the published results from 1863 to 1879.

An examination of arcs of 45° showed that after these corrections were applied there were outstanding division-errors of a magnitude which could not be disregarded in the existing state of astronomical work; and I therefore made arrangements by which two of the supplementary microscopes could be shifted relatively to the four in general use: but it was not possible for me to arrange these additional microscopes altogether as I could have wished, and in the examination of the division-errors the errors of observation accumulate; but, in order to diminish the effect as much as possible, a large number of independent determinations were made, and it was only after the results showed a clear tendency to group around mean values that the corrections to the division-errors were accepted. The division corrections thus found when applied to the results have almost entirely destroyed, in mean results, the discordance between the Nadir-points determined from stars and with the Bohnenberger's eye-piece, and, although they are not yet determined with all the exactitude I could wish, the outstanding errors are certainly small.'

This is all the information we have as to Stone's method of treating this important question, and when the necessity arose of deciding whether his results should be adopted in the reduction of the circle readings for the present catalogue, it was found impossible to make out from his description exactly how the table of corrections, printed year after year in the volumes of *Radcliffe Observations*, had been deduced.

I was averse to adopting these corrections without a thorough examination, and our time being fully occupied with other branches of work I did not feel inclined to set them entirely aside and to undertake the investigation all over again if it could be avoided. The original observations had been preserved amongst the other records of the Observatory, and I was fortunate in retaining the services of two assistants, Messrs. Wickham and Robinson, who had made the observations under Stone's direction. Finding on examination that the observations, although not arranged in the most favourable way possible for the purpose, did actually afford the data for a rigorous determination of these errors, I decided to reduce them afresh, and thus, from the same material as Stone employed, to obtain an entirely independent determination.

Stone seems to have determined the errors of the 45° arcs, but the data from which he deduced them cannot now be found. His next step was to displace the opposite microscopes *A* and *C* through 1°, so as still to remain opposite to each other. With the microscopes in this position, nineteen distinct series of measures were made, each measure consisting of readings of the six microscopes, *a*, *b*, *c*, *d*, *A*, and *C*. The series were arranged as follows:—

Series.	Date.	Lines under the Pointer Microscope.
1.	1881, Dec. 18.	Every degree from 0° to 90°, repeating 0° at the end of the series.
2.	„ „ 19.	Every degree from 90° to 180°, repeating 90°.
3.	„ „ 20.	Every degree from 180° to 270°, repeating 180°–187°, 230°–232°, and 188°–198°.
4.	„ „ 21.	Every degree from 180° to 270°, repeating 180°, 224°, 226°, 237°, 238°, and 270° several times.
5.	„ „ 22.	Every degree from 270° to 360°, repeating 270°, 314°, 316°, and 360° several times.
6.	„ „ 28.	Every degree from 0° to 90°, repeating 0°, 44°, and 90° several times.
7.	„ „ 29.	Every degree from 90° to 180°, repeating 90°, 126°, 134°, 135°, 136°, and 180° several times.
8.	„ „ 30.	Every degree from 180° to 270°, repeating 180°, 224°, and 270° several times.
9.	1882, Jan. 1.	Every degree from 270° to 360°, repeating 270°, 314°, and 360° several times.
10.	„ „ 4.	Every even degree from 0° to 180°, repeating 0°, 44°, 46°, 48°, 90°, 134°, 136°, and 180° several times.
11.	„ „ 5.	Every even degree from 180° to 360°, repeating 180°, 224°, 226°, 270°, 314°, 316°, and 360° several times.
12.	„ „ 9.	Every even degree from 180° to 90°, repeating 180°, 136°, 134°, 90°, 46°, 44°, and 0° several times.
13.	„ „ 10.	Every even degree from 90° to 0°, repeating 90°, 46°, 44°, and 0° several times.
14.	„ „ „	Every even degree from 360° to 270°, repeating 360°, 316°, 314°, and 270° several times.
15.	„ „ 11.	Every even degree from 270° to 180°, repeating 270°, 226°, 224°, 180°, and 0° several times.
16.	„ „ „	Every even degree from 180° to 90°, repeating 180°, 136°, 134°, and 90° several times.
17.	„ „ 12.	Every even degree from 90° to 0°, repeating 90°, 46°, 44°, and 0° several times.
18.	„ „ „	Every even degree from 360° to 270°, repeating 360°, 316°, 314°, and 270° several times.
19.	„ „ 13.	Every even degree from 270° to 180°, repeating 270°, 226°, 224°, and 180° several times.

These nineteen series contain in all 10,612 readings of the circle, and as they had been made with great care it seemed inadvisable to set them aside.

The first step was to determine the errors of the lines 0°, 90°, 180°, and 270°. For this purpose special observations were made by Mr. Wickham, the readings of the four microscopes *a*, *b*, *c*, and *d*

being taken when each of these lines was brought in succession under microscope *a*. Five such series of measures were made, and from the mean of them we obtain four separate determinations of the error of each line. From the means of these we find

Line	0°	90°	180°	270°
Error	0″·00	−1″·12	−0″·33	−2″·75.

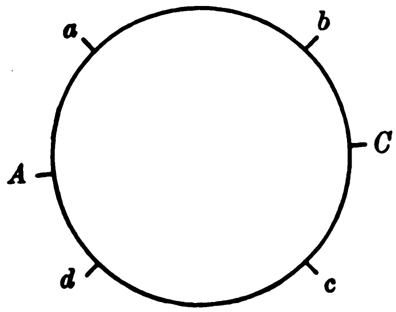

Fig. 6.

In the nineteen series of observations described above, the microscopes were arranged as indicated in the margin, A and C being displaced from their usual positions by 1°, so that the arcs aA and cC were each approximately 46° in length and the arcs Ad and Cb approximately 44° each.

When the pointer reading is 0°, then the 0° line is under a and the 46° line under A; hence, if A_0 is the reading of microscope A and a_0 that of microscope a, we have the distance between the lines 0° and 46° on the circle equal to the arc $Aa + A_0 - a_0$. But it is also equal to $46° + e_{46} - e_0$, in which e_0 and e_{46} are the errors of the lines 0° and 46°. Hence

$$\text{arc } Aa + A_0 - a_0 = 46° + e_{46} - e_0.$$

Similarly

$$\text{arc } Cc + C_0 - c_0 = 46° + e_{226} - e_{180}.$$

If we denote the mean of the arcs Aa and Cc by M, the mean of the readings at A and C by R_0, the mean of the readings at a and c by r_0, and the mean of the errors at opposite lines by capitals, thus, $E_{46} = \frac{1}{2}(e_{46} + e_{226})$, &c., then we have

$$M + R_0 - r_0 = 46° + E_{46} - E_0.$$

Similarly

$$M + R_{46} - r_{46} = 46° + E_{92} - E_{46},$$
$$M + R_{92} - r_{92} = 46° + E_{138} - E_{92},$$
$$\cdot\quad\cdot\quad\cdot\quad\cdot\quad\cdot\quad\cdot\quad\cdot$$
$$\cdot\quad\cdot\quad\cdot\quad\cdot\quad\cdot\quad\cdot\quad\cdot$$
$$M + R_{178} - r_{178} = 46° + E_{224} - E_{178},$$

and

$$M + R_{224} - r_{224} = 46° + E_{270} - E_{224}.$$

If then we put

$$R = \tfrac{1}{45}(R_0 + R_{46} + \quad . \quad . \quad . \quad + R_{224}) \quad \text{and} \quad r = \tfrac{1}{45}(r_0 + r_{46} + \quad . \quad . \quad . \quad + r_{224}),$$

we have

$$M + R - r = 46° + (E_{270} - E_0)/45,$$

and taking differences we find

$$R_n - r_n - (R - r) = E_{n+46} - E_n - (E_{270} - E_0)/45,$$

where n may be any of the numbers in the first column of Table III. From this expression the errors attaching to each of these forty-five lines may be found in succession.

Treating the observations made at the readings given in the second column in a similar manner, we find

$$R_n - r_n - (R - r) = E_{n+46} - E_n - (E_{180} - E_{270})/45,$$

from which the errors of the lines corresponding to the numbers in that series may be found.

Since E_n is the mean of the errors attaching to the lines $n°$ and $180° + n°$, and since the numbers in the third and fourth columns differ by 180 from those in the first and second, it is clear that from these 180 sets of readings we obtain two independent determinations of the errors attaching to the mean of two opposite readings corresponding to every diameter passing through an even degree on the circle; and, as any flexure there may be will act in opposite directions in these two series, the mean of both determinations will be almost entirely free from this source of error.

If now the observations had been grouped in accordance with the numbers in these columns, that is to say, if the lines 0°, 46°, 92°, . . . 224°, 270° had been observed on one occasion, the lines 270°, 316°, 2°, . . . 134°, 180° on another and so on, a strong determination of the individual errors would have resulted. Unfortunately, however, this was not the case, but some of the lines

TABLE III.

Successive Numbers.

For the 46° Arcs.				For the 44° Arcs.			
0°	270°	180°	90°	0°	180°	90°	270°
46	316	226	136	44	224	134	314
92	2	272	182	88	268	178	358
138	48	318	228	132	312	222	42
184	94	4	274	176	356	266	86
230	140	50	320	220	40	310	130
276	186	96	6	264	84	354	174
322	232	142	52	308	128	38	218
8	278	188	98	352	172	82	262
54	324	234	144	36	216	126	306
100	10	280	190	80	260	170	350
146	56	326	236	124	304	214	34
192	102	12	282	168	348	258	78
238	148	58	328	212	32	302	122
284	194	104	14	256	76	346	166
330	240	150	60	300	120	30	210
16	286	196	106	344	164	74	254
62	332	242	152	28	208	118	298
108	18	288	198	72	252	162	342
154	64	334	244	116	296	206	26
200	110	20	290	160	340	250	70
246	156	66	336	204	24	294	114
292	202	112	22	248	68	338	158
338	248	158	68	292	112	22	202
24	294	204	114	336	156	66	246
70	340	250	160	20	200	110	290
116	26	296	206	64	244	154	334
162	72	342	252	108	288	198	18
208	118	28	298	152	332	242	62
254	164	74	344	196	16	286	106
300	210	120	30	240	60	330	150
346	256	166	76	284	104	14	194
32	302	212	122	328	148	58	238
78	348	258	168	12	192	102	282
124	34	304	214	56	236	146	326
170	80	350	260	100	280	190	10
216	126	36	306	144	324	234	54
262	172	82	352	188	8	278	98
308	218	128	38	232	52	322	142
354	264	174	84	276	96	6	186
40	310	220	130	320	140	50	230
86	356	266	176	4	184	94	274
132	42	312	222	48	228	138	318
178	88	358	268	92	272	182	2
224	134	44	314	136	316	226	46

in a series were observed on one occasion, and some on another. I have, therefore, been obliged to take the mean reading for each line as deduced from the eighteen different series (rejecting

No. 3, which at the time was considered defective), and have had to assume that if any slight shift of the microscopes took place between one set of measures and another its effect will disappear in the mean of the differences.

As will be seen from the description given above of the different series of observations, special readings were several times repeated in each series to check the stability of the instrument, and this would have led to the detection of such a displacement had it occurred. The mode of mounting the microscopes in the pier and the general rigidity of the instrument would lead one to expect *a priori* that such effects would be very small indeed. The microscopes are, all six, mounted in the massive stone of which the western pier is composed, the eye-piece micrometers being inserted in solid brass castings which are bolted to the outer face of the pier, whilst the objectives are mounted in similar castings bolted to the inner face. No metal tubes connect the objectives and eye-pieces. There is thus very little reason to fear any serious relative shift such as would fail to disappear in the difference $R-r$. The close agreement of the different determinations points in the same direction, and seems to indicate that the effect of any such disturbance is practically eliminated from the final means.

A comparison of the readings of the microscopes *b* and *d* with those of *A* and *C* will also in an exactly similar way give two independent determinations of the errors of the lines corresponding to every even degree on the circle. The successive numbers for this arc are 0°, 44°, 88°, &c., as shown in columns 5, 6, 7, and 8 of Table III.

We thus obtain, in all, four independent values of the division errors.

Finally, since a complete circle reading always consists of the mean of the readings of the four microscopes *a*, *b*, *c*, and *d*, we must take the means of the errors, as found above, for the lines 0° and 90°, 1° and 91°, 2° and 92°, and so on. We thus obtain the following table of corrections. In the first column is given the pointer reading; in the second is the correction for division errors to the mean of the four microscopes as determined from the observations of the 46° arcs; in the third column are the corrections similarly deduced from the observations of the 44° arcs; the fourth column contains the mean of the quantities on the same line in the second and third columns; the fifth column gives the values of the same quantities deduced by Stone and published by him in the introduction to the *Radcliffe Observations* since 1881. The last column contains the differences between the corrections as now deduced and those originally found by Stone.

These differences, though evidently of a systematic character, are very small, in no case exceeding 0″·13. There is this to be considered, too, that Stone reduced the observations as they were taken, each day directing what lines should be observed. From the intimate knowledge he thus possessed of the work as it proceeded, and of the relative value of each day's results, he may have had reason for weighting some of the series more heavily than others. In this way he was, we know, influenced to reject the third series altogether on account of some unrecorded defect in the observations. In the present investigation, on the contrary, it has been necessary, in the absence of sufficient information, to give all observations equal weight, with the exception of the discarded series No. 3. For these reasons I decided to adopt Stone's corrections for the present catalogue without any alteration whatever, more particularly as they had been already employed in the reduction of the observations.

TABLE IV.

CORRECTIONS TO THE MEAN OF THE FOUR MICROSCOPES *a*, *b*, *c*, AND *d* FOR THE DIVISION ERRORS OF THE CIRCLE.

N.P.D.	From 46° Arc.	From 44° Arc.	Mean.	Stone.	Rambaut minus Stone.
°	"	"	"	"	"
0	0·00	0·00	0·00	0·00	0·00
2	+0·19	+0·07	+0·13	+0·11	+0·02
4	−0·12	−0·19	−0·15	−0·22	+0·07
6	−0·07	+0·02	−0·02	−0·08	+0·06
8	−0·49	−0·20	−0·34	−0·41	+0·07
10	−0·29	+0·01	−0·14	−0·20	+0·06
12	−0·27	+0·21	−0·03	−0·10	+0·07
14	−0·52	−0·07	−0·29	−0·23	−0·06
16	−0·25	+0·25	0·00	+0·07	−0·07
18	−0·04	+0·33	+0·14	+0·22	−0·08
20	−0·27	+0·15	−0·06	+0·04	−0·10
22	−0·24	+0·30	+0·03	0·00	+0·03
24	−0·23	+0·05	−0·09	−0·02	−0·07
26	−0·42	−0·08	−0·25	−0·13	−0·12
28	−0·36	−0·10	−0·23	−0·11	−0·12
30	−0·15	−0·03	−0·09	+0·03	−0·12
32	−0·37	−0·16	−0·26	−0·14	−0·12
34	−0·35	−0·23	−0·29	−0·17	−0·12
36	−0·63	−0·42	−0·52	−0·41	−0·11
38	−0·69	−0·35	−0·52	−0·40	−0·12
40	−0·28	−0·16	−0·22	−0·10	−0·12
42	−0·16	+0·02	−0·07	+0·06	−0·13
44	−0·03	−0·13	−0·08	0·00	−0·08
46	+0·20	+0·11	+0·15	+0·15	0·00
48	−0·12	−0·09	−0·10	−0·11	+0·01
50	+0·26	+0·36	+0·31	+0·26	+0·05
52	+0·23	+0·43	+0·33	+0·27	+0·06
54	+0·13	+0·56	+0·34	+0·29	+0·05
56	+0·57	+0·89	+0·73	+0·67	+0·06
58	+0·93	+1·26	+1·09	+1·05	+0·04
60	+0·80	+1·40	+1·10	+1·17	−0·07
62	+0·58	+0·96	+0·77	+0·84	−0·07
64	+0·42	+0·68	+0·55	+0·65	−0·10
66	+0·14	+0·38	+0·26	+0·36	−0·10
68	+0·16	+0·31	+0·24	+0·33	−0·09
70	−0·41	−0·19	−0·30	−0·18	−0·12
72	−0·60	−0·33	−0·46	−0·34	−0·12
74	−0·74	−0·56	−0·65	−0·53	−0·12
76	−0·73	−0·54	−0·63	−0·51	−0·12
78	−0·66	−0·39	−0·52	−0·41	−0·11
80	−0·35	−0·11	−0·23	−0·12	−0·11
82	−0·64	−0·33	−0·48	−0·37	−0·11
84	−0·41	−0·26	−0·33	−0·21	−0·12
86	−0·03	+0·16	+0·06	+0·19	−0·13
88	−0·22	−0·20	−0·21	−0·08	−0·13
90	0·00	0·00	0·00	0·00	0·00

Mode of Observation and Reduction.

The method of taking and reducing the observations is in general similar to that employed in preparing the 1890 Catalogue, the only changes of importance being the introduction of the chronograph for registering transits, and of the recording micrometer for use in the zenith distance observations. Both of these changes have added considerably to the accuracy of the results. The personal equations of the three observers, which were carefully discussed from time to time during the progress of the work, have been found to remain remarkably constant. They are, perhaps, rather large, but, as each observer determines his own clock error, they enter only into the computation of the daily rate of the clock. Referred to the mean eye-and-ear habit of the three observers they have been found to be as follows in successive years:—

Personal Equations Applied in Determining the Rate of the Transit Clock, Dent 1317.

	Eye and Ear.			Chronograph.		
	W.	R.	C.	W.	R.	C.
	s.	s.	s.	s.	s.	s.
1894	+0·19	−0·32	+0·12			
1895	+0·26	−0·37	+0·10			
1896	+0·30	−0·31	+0·02			
1897	+0·28	−0·32	+0·03			
1898	+0·31	−0·32	−0·01			
1899	+0·32	−0·30	−0·02	+0·28	+0·07	+0·10
1899·5	+0·28	−0·28	0·00	+0·27	+0·12	+0·15
1900	+0·28	−0·28	0·00	+0·27	+0·12	+0·15
1901	+0·28	−0·28	0·00	+0·27	+0·12	+0·15
1902	+0·28	−0·27	0·00	+0·27	+0·12	+0·15
1902·3	+0·28	−0·27	0·00	+0·27	+0·09	+0·13
1903	+0·28	−0·27	−0·01	+0·27	+0·09	+0·13

The sign + indicates that the observer to whom it applies makes the observed clock-time *greater* than the mean.

In the period embraced by the Catalogue there were altogether about 11,000 transits observed, about 8,250 by the eye-and-ear method, and 2,750 with the chronograph. About one quarter of these being transits of clock stars were not used in forming the Catalogue places, for the reason explained in the next paragraph. Of those retained, the proportion would be about 6,000 eye-and-ear, and 2,000 with the chronograph. The chronograph was first used on April 18, 1899, and has been employed almost exclusively since March 16, 1901.

The collimation error is determined by observations of the north and south collimators, the level by observations from a Nadir mercury trough with a Bohnenberger eye-piece, and the azimuth error by observations of one or more of the following azimuth stars, viz. *Polaris*, *Cephei* 51 (Hev.), *Groombridge* 1119, *Bradley* 1672, *Groombridge* 2283, *δ Ursae Minoris*, *λ Ursae Minoris*, and *Bradley* 3147. The observations of these stars have not been included in deducing their places for the Catalogue unless the azimuth error has been determined from at least two transits of circumpolar stars, one observed above and the other below the pole. The right ascensions of clock stars have not been retained unless the clock error has been deduced from at least four clock stars. All observations of right ascension have been corrected for the irregularities of the pivots given on pages xii and xiii of this Introduction. For the determination of the error of the clock, the places of the *Nautical Almanac* have been used with the corrections derived from the Greenwich Clock-Star Lists (which have each year been furnished to the Observatory by the courtesy of the Astronomer Royal) with the exception of the two stars *α Columbae* and *Fomalhaut*, which have not been employed for this purpose.

The observations of North Polar Distance have been reduced with the Nadir point as determined each night by means of a Bohnenberger's reflecting eye-piece. No correction for the $R-D$ discordance has been made to the direct observations, the whole difference being applied as a correction to the reflected observations to render them homogeneous with the direct. From a number of observations distributed over the period embraced by the Catalogue this correction was found to be represented by the expression

$$R-D = +0''\cdot295 - 0''\cdot184 \sin Z.D.$$

The second term rests on somewhat slender evidence and has accordingly been neglected, but the constant term has been applied to correct all reflexion observations. Another small correction required by reflexion observations is due to the difference between the latitude of the Transit Circle and that of the mercury trough. As the latter is always situated along a horizontal plane three feet below the axis of the telescope, it is easily seen that the correction to the zenith distance due to this cause is given by the expression

$$+0''\cdot06 \tan Z.D.$$

This correction, although so small, has, whenever sensible, been applied to reflexion observations.

The correction for flexure found by Stone, viz. :—

$$1''\cdot10 \sin Z.D.$$

continued to be applied until Nov. 19, 1899, when the old breech end was removed, the tube cut, and a new breech-piece applied. From a series of measures made in September, 1901, the horizontal flexure of the instrument in its altered condition was found to be $1''\cdot46$. This value was subsequently corroborated by a careful series of measures made in June, 1902, by four different observers after the complete isolation of the collimator piers. The individual results agreed closely *inter se* and gave as a mean the value $1''\cdot48$ for this constant. All observations made subsequently to Nov. 19, 1899, have accordingly been affected with a flexure correction of

$$1''\cdot5 \sin Z.D.$$

The horizontal wire in the eye-piece of the telescope is moved by a micrometer screw and the reading is impressed on a fillet of paper by means of a steel disk attached to the head on which the divisions are embossed. Several bisections of the star are made at convenient parts of the field before and after the transit of the middle wire, and recorded on the paper without requiring the observer to withdraw his eye from the eye-piece. A complete observation consists of four or five such settings and the readings of the circle at the four microscopes *a*, *b*, *c*, and *d*.

The N.P.D. screw has been examined from time to time during the progress of the work, but no injurious effect of wear could be detected. On several occasions a series of pairs of Nadir determinations were made at various readings of the telescope micrometer and of the circle, but there seemed to be no trace of any systematic difference depending on the part of the screw used. The observations of January 20, 1904 (see p. xxii), will serve as an illustration. This series was obtained shortly after the observations for the Catalogue had been finished and shows the state of the screw at that time.

Two sets of observations of the Nadir point were made at eleven different readings of the telescope micrometer from $14^r\cdot4$ to $24^r\cdot0$. In the first the observer stood on the north side of the instrument, and then a similar series was made in reverse order, the observer standing on the south side. In this way the mean of each pair of observations at the same micrometer reading corresponds to nearly the same instant of time and so any progressive change of a uniform character is eliminated. In observations 1 to 6 and 17 to 22 the division line 218° 15′ was read. In the other observations the setting was made on line 218° 10′.

The small discordances shown here between the individual means are well within the limits of accidental error in observations of this kind. In fact, as computed from these observations, the probable error of a determination of the Nadir point observed in a north and south position is found to be only $\pm 0''\cdot07$. In Nadir observations the line 218° 15′ has been invariably used since 1880.

OBSERVATIONS OF NADIR, 1904 JANUARY 20.

Order of taking Nadir.	Setting.			Tel. Mic.	Position of Observer.	Division line under Microscope.		Separate determinations of Zenith Point.			Resulting Zenith Point. (Mean of N. and S.)		
	°	′	″	r		°	′	°	′	″	°	′	″
1	218	17	39	14·4	N.	218	15	38	25	19·93	38	25	20·11
22			39	14·4	S.					20·29			
2		17	2	15·6	N.	218	15			20·35			20·16
21			8	15·4	S.					19·98			
3		16	34	16·5	N.	218	15			20·34			20·20
20			47	16·0	S.					20·07			
4		16	15	17·1	N.	218	15			20·02			20·11
19			17	17·0	S.					20·20			
5		15	45	18·0	N.	218	15			19·95			20·10
18			47	17·9	S.					20·26			
6		15	11	19·0	N.	218	15			19·63			19·87
17			12	19·0	S.					20·10			
7		14	42	20·0	N.	218	10			20·08			20·06
16			38	20·1	S.					20·05			
8		14	11	20·9	N.	218	10			19·94			20·13
15			16	20·8	S.					20·32			
9		13	41	21·9	N.	218	10			20·06			20·27
14			41	21·9	S.					20·49			
10		13	5	23·0	N.	218	10			20·06			20·17
13			9	22·9	S.					20·29			
11		12	34	24·0	N.	218	10			20·33			20·20
12			34	24·0	S.					20·08			

The correction for run of each microscope is taken as the excess (or defect) over five minutes of arc of the differences between the readings corresponding to two adjacent traits on the circle. The mean correction for the four microscopes has been applied to every circle reading.

The division errors as determined by Stone in 1881 and 1882 have been applied to all readings of the circle (see p. xix). The inclination of the horizontal wire has been frequently determined and from many observations made at various parts of the wire it is shown that it is sensibly a straight line.

The refractions down to Z. D. 85° are those of Bessel's *Tabulae Regiomontanae*, computed by the aid of the Tables printed as an Appendix to the *Greenwich Observations for* 1853.

Below 85° zenith-distance, the mean refractions of the *Fundamenta*, multiplied by the factor 1·003282, have been substituted for those of the *Tabulae Regiomontanae* for the sake of continuity. In the calculations, the barometer-readings used are those of the standard by Newman, No. 1220, which hangs in the Transit-Circle room with its cistern at a height of 2½ feet above the floor, and the thermometer-readings are those of Hicks, No. 576, which is mounted on the north side

of the building, and is used as a standard thermometer for the reduction of the photographic meteorological records.

The star corrections have been computed by the aid of Stone's Tables (*Appendix to Cape Observations*, 1874) and Bessel's Day Numbers, except for stars whose apparent places are given in the *Nautical Almanac*. The corrections for these stars have been found by subtracting the apparent R.A., or Declination as the case might be, from the mean as given in that work.

Proper Motion and Precession.

The proper motions adopted in the catalogue are for the most part those of Auwers' *Neue Reduction der Bradley'schen Beobachtungen.* The exceptions to this rule are pointed out in the notes at the foot of each page.

The proper motions given by Auwers in his *Verbesserungen der Eigenbewegungen*, published in the *Astronomische Nachrichten*, 3928-9, generally agree very closely with those of Auwers' *Bradley* for stars contained in the *Radcliffe Catalogue for* 1900; the few exceptions are indicated in the notes (e.g. Nos. 1020, 1358, 1491, &c.). The proper motion in N.P.D. of Auwers' *Bradley* for No. 1264 is only approximate, and that of Bossert has therefore been preferred. For close circumpolar stars the proper motions of Auwers' *Bradley* (reduced to 1900) have been used where possible. For No. 709 (Groomb. 1119), and No. 1178 (Groomb. 2283), the values found by Thackeray (*Monthly Notices of R. A. S.*, lviii, pp. 45–6) have been adopted. As the Struve-Peters constants of the precession have been used throughout, the above proper motions have been preferred to those of Newcomb, which are based on the new value of the precession obtained by him.

Proper motions taken from other sources than Auwers' *Bradley* have been checked by the recent Radcliffe observations before they were adopted for the Catalogue. The following works have been consulted for proper motions, and are referred to in the notes to the Catalogue:—

Auwers. 'Verbesserungen der Oerter des vorläufigen Fundamental-Catalogs.' . . . *Astronomische Nachrichten*, No. 3511.

Auwers. 'Tobias Mayer's Sternverzeichniss.' (Chiefly Zodiacal Stars. Auwers considers these proper motions of equal or nearly equal value to those of Auwers' *Bradley*.)

Auwers. 'Catalog der Astronomischen Gesellschaft, Berlin A, pp. 212–224, Verzeichniss der Eigenbewegungen.' (The corrections on pp. 360–362 have been applied.)

Auwers. 'Fundamental-Catalog für die Zonen-Beobachtungen, 1875·0; Astronomische Gesellschaft, xiv, xvii.'

Becker. 'Catalog der Astronomischen Gesellschaft, Berlin A, pp. 210–213; Verzeichniss der Eigenbewegungen.' (In a few instances the places of stars with marked discordances, given at pp. 221–223, have been discussed and the proper motions determined for the present Catalogue (*vide* Nos. 833, 1405, and 1448.)

Boss. 'Catalog der Astronomischen Gesellschaft, Albany. Notes to the Catalogue, Part I, pp. 222–231.' (In Part II of the Notes, Boss indicates possible proper motions for certain other stars. Some of these suspicions have been confirmed by the Radcliffe observations, and the values of the proper motions computed and adopted; e.g. Nos. 127, 260, &c.)

Bossert. 'Détermination des Mouvements Propres des Étoiles,' given in the Introductions to the four volumes of the 'Catalogue de l'Observatoire de Paris.'

Porter. 'Publications of the Cincinnati Observatory, No. 12. Catalogue of 1340 Proper Motion Stars.'

Porter. 'Publications of the Cincinnati Observatory, No. 14. Catalogue of 2030 Stars and Proper Motions of 971 Stars.'

Schroeter. 'Untersuchung über die Eigenbewegung von Sternen in der Zone 65°–70° nördlicher Declination. Publication des Universitäts-Observatoriums in Christiania.'

Stone. Proper motions specially computed for the 'Radcliffe Catalogue of 6424 Stars for 1890,' and adopted in that work.

In several cases, as indicated in the notes, the proper motions have been specially computed for the present work. For this purpose the following Catalogues have been utilized:—Lalande, 1800; Weisse's Bessel, 1825; Downing's Taylor, 1835; Rümker, 1836; Santini, 1840; Oeltzen's

Argelander, 1842; Paris, 1845; Weisse's Argelander (S), 1850; Frisby's Yarnall, 1860; Paris, 1860; Brussels, 1865; Schjellerup, 1865; Glasgow, 1870; Albany A. G., 1875; Bonn A. G., 1875; Berlin (B) A. G., 1875; Paris, 1875; Lamont, 1880; Cape, 1880; Radcliffe, 1890; Glasgow, 1890.

In comparing these catalogues Auwers' *Tafeln zur Reduction von Sterncatalogen auf das System des Fundamental-Catalogs des Berliner Jahrbuchs*, published as No. 7 of the *Ergänzungshefte zu den Astronomischen Nachrichten*, have been employed in order to render the material as homogeneous as possible. At the time this comparison was made, the corrections for pivot errors had not yet been applied to the recent Oxford observations of right ascensions. The corrections for systematic errors given in that work for the *Radcliffe Catalogue*, 1890 (which are to a great extent accounted for by the pivot corrections subsequently applied, see *Monthly Notices of R. A. S.*, vol. lxv, p. 79), have, therefore, in this part of the work, been assumed to be applicable to both the 1890 and 1900 Catalogues.

The reduction of the separate results to the epoch of the Catalogue has been made in the following manner:—For use in computing the precessions, preliminary places, as accurate as possible, for 1900·0 were first found for each star. These were taken,

(1) for Nautical Almanac Stars, from that work for 1900;

(2) for Zone Stars between 85° and 89° N.P.D., from Albany, A. G., adopting the precessions given in that Catalogue and applying proper motions, when sensible, from some of the sources mentioned above;

(3) for Zodiacal Stars, chiefly from recent Greenwich annual volumes;

(4) for Close Polar Stars, from recent Radcliffe observations, using the precessions given in Radcliffe, 1890, and Greenwich, 1890, allowing for the third term of the precession and proper motions whenever sensible;

(5) for miscellaneous stars, from some modern catalogue, e.g. Greenwich, 1880 or 1890, Paris, 1875, and various A. G. Catalogues; or, if the star's place could not be readily found, it was specially brought up from the recent Radcliffe observations.

With these places, the precessions and secular variations were then computed with the help of Folie's *Douze Tables pour le calcul des Réductions Stellaires*, employing the Struve-Peters constants. The precessions and secular variations thus found were then checked by comparing them with the values given in

(1) one of the A. G. Catalogues;

(2) Greenwich Catalogue, 1890;

(3) Greenwich volumes of recent years.

For stars not found in any of the above the computation was carefully examined throughout.

With the values of the precessions so deduced, and, in the cases of standard stars, including proper motion, each separate observation was reduced to 1900·0. The resulting places were then compared together, and if the agreement of the separate results *inter se* was not perfectly satisfactory, those values which stood out from the mean, together with those means which differed considerably from the preliminary places found as explained above, were marked, and all computations relating to them critically examined. In this way, it is hoped, the errors, from which we can scarcely expect to be entirely free, have been kept within as narrow limits as possible.

In all cases, the proper motions given in the Catalogue have been included in deducing the final places. If, therefore, at any time it should be desired to substitute other values of the proper motion for those here given, this can easily be accomplished by adding to the co-ordinates of the star, as found in the Catalogue, the product obtained by multiplying the difference between the given proper motion and that which is to be substituted for it by the interval in years between the mean date of observation of the star and the epoch of the Catalogue.

DETERMINATION OF THE EQUINOX.

The right ascensions of the stars in this catalogue were in the first instance based on those of the Greenwich Clock Star Lists issued annually by the Royal Observatory. For the period covered by the catalogue, with the exception of the last year, these constitute a fairly homogeneous system, the mean difference of any two lists being very small, although more than one change was made in the sources from which the places were deduced. Thus for the years 1894–97 they were taken from the new *Five-Year Catalogue of* 258 *Fundamental Stars for* 1890. From 1898 to 1900 they are the mean R. A.s adopted for the *Ten-Year Catalogue for* 1890. In 1901 and 1902 they are deduced from the 'Standard Mean Right Ascensions of Clock Stars for 1890·0, based on Twelve-Hour Groups,' printed at the end of the *Introduction to the Second Ten-Year Catalogue for* 1890. In the Clock List for 1903, however, an abrupt change was introduced, the places being taken from the same list of standard right ascensions as in the two preceding years, but having a correction of $+0^s{\cdot}054$ applied to them to refer them to the Equinox of Professor Newcomb's *Catalogue of Fundamental Stars for* 1900. As the observations for the present catalogue were then drawing to a close, and as it was obviously advisable to refer all the observations to the same equinox, this correction with its sign changed was applied to the places of the Greenwich Clock Star List for 1903 before the latter were used in reducing the Oxford observations.

Observations of the Sun were made at this Observatory during the years 1896–99, for the determination of the equinox and the position of the ecliptic. These observations were discussed in the manner described at pp. 101 and 102 of vol. xliv, and pp. 226 and 227 of vol. xlvii of the *Radcliffe Observations.*

The results for each separate year and the number of observations are as follows:

	No. of Obs.	$d\alpha$	$d\Delta$	$d\omega$
		s	″	″
1896	71	+0·012	+0·18	+0·13
1897	29	+0·178	−0·33	−0·08
1898	81	−0·072	+0·11	+0·05
1899	81	−0·069	−0·19	+0·96

In this table

$d\alpha$ denotes the mean correction required by the observed right ascensions,
$d\Delta$ „ „ „ „ „ „ „ N.P.D.s,
and $d\omega$ „ „ „ „ „ „ tabular obliquity,

as indicated by the observations of the Sun.

Taking the simple means we find

$$d\alpha = +0^s{\cdot}012\,; \qquad d\Delta = -0''{\cdot}06\,; \qquad d\omega = +0''{\cdot}27.$$

The observations of the Sun in these years are somewhat unevenly distributed so that some of the values given above are of less weight than others. Assigning approximate weights to the individual results, determined by the number of observations and their distribution in the various seasons, we find

$$d\alpha = +0^s{\cdot}009\,; \qquad d\Delta = -0''{\cdot}03\,; \qquad d\omega = +0''{\cdot}21.$$

The solar observations, for the years 1896–99, were reduced with the value of the colatitude adopted by Stone for the 1890 Catalogue, viz.

$$38^\circ\ 14'\ 24''{\cdot}61$$

and no account was taken of the variation of this quantity in computing them. It was, therefore, necessary to ascertain how far they must be modified when allowance is made for this variation.

The corrections for the variation of latitude up to the end of the year 1899, were obtained by means of the values of x and y given in the *Astronomical Journal*, No. 522, p. 147, in the columns headed 'Comp.' After 1900·0 Albrecht's values published in the *Astronomische Nachrichten*, 3808, 3875, and 3945 were employed in the discussion of the colatitude.

When these corrections are applied to the observations of the Sun we find

$$da = -0^s{\cdot}010\,; \qquad d\Delta = -0''{\cdot}03\,; \qquad d\omega = +0''{\cdot}17.$$

It will thus be seen that whether the variation of latitude be taken into account or not the correction to the equinox (da) is practically insensible in observations of the Sun. This result, being obtained from the observations of only four years, is naturally affected by considerable uncertainty, and it has, accordingly, not been applied in deducing the final right ascension of stars. The equinox of the catalogue is therefore the same as that of the Greenwich 'Standard Mean Right Ascension of Clock Stars for 1890·0.'

The Colatitude.—The colatitude deduced from 246 observations of close circumpolar stars above and below the pole is $38^\circ\ 14'\ 24''{\cdot}41$.

This value had been obtained and employed in reducing the places of a large number of stars before the correction for variation of latitude had been computed. The effect of the introduction of these corrections into the places of the close polars was to improve slightly the agreement of the N.P.D.s *inter se*, but the resulting mean correction to the deduced colatitude was practically *nil*, being only $-0''{\cdot}01$. The above value of the colatitude was therefore adopted without alteration.

As an example of the effect of the movement of the pole on the observations the following table is given which exhibits the probable error of an observation in N.P.D. of Polaris as computed with and without the corrections for variation of latitude.

Probable Error in N.P.D. of Polaris.

		Uncorrected.	Corrected.	No. of Obs.
		"	"	
Polaris	1897	±0·220	±0·256	8
	1898	0·679	0·594	4
	1899	0·281	0·258	4
	1903	0·179	0·110	7
Polaris, S.P.	1897	0·311	0·252	7
	1898	±0·200	±0·179	9

These groups of observations have been selected for the purpose of illustration as including a relatively large range of variation in latitude, i.e. not less than $0''{\cdot}20$.

Orbital Motion of Sirius and Procyon and Parallax of Sirius.

In recent years several alterations have been made in the method of deducing the apparent and mean places for the *Nautical Almanac* of the two stars Sirius and Procyon, Nos. 583 and 672 of this Catalogue. From 1896 to 1899 the apparent places of these stars have been corrected for the effect of their orbital motion since 1890·0, the corrections being deduced from Auwers' elements (*Astronomische Nachrichten*, Nos. 1371–3 and 3084–5). The mean places are those of the Greenwich *Five-Year or Ten-Year Catalogues for* 1890. In 1900 both mean and apparent places have been corrected for the orbital motion since 1890·0. In 1901 the mean places and proper motions of Professor Newcomb's *Catalogue of Fundamental Stars* having been adopted, the mean and apparent places of the *Nautical Almanac* were both corrected for the effect of orbital motion. And, finally, in 1902 a further change was made by the introduction of the correction for the effect of annual parallax in the case of Sirius.

In reducing the observations of these stars the corrections to mean place were in the first instance obtained, as in the case of the other *Nautical Almanac* stars, by subtracting the apparent from the mean co-ordinates as given in the *Nautical Almanac*, and adding the differences as corrections to the apparent place observed at Oxford. In deducing the final place for the Catalogue,

however, the changing corrections of the *Nautical Almanac* for orbital motion were entirely eliminated so as to obtain a mean result independent of them, and the mean so found was then reduced to the centre of gravity of the system by means of Auwers' values.

The places given in the Catalogue for these two objects refer therefore in each case to the centre of gravity of the system.

In the case of Sirius, the correction to the apparent place for the effect of annual parallax—which, adopting the value, $0''\cdot37$, as found by Gill, amounts in the mean to $+0^s\cdot024$ in R.A. and to $-0''\cdot06$ in N.P.D.—has been included in deducing the final place. This is the only star in the present volume for which it has been necessary to take the annual parallax into account in forming the Catalogue place. This star was observed on 1903 March 6 and 16.

The Accuracy of the Results.

Probable Errors.—As the right ascensions of the present catalogue have been partly observed by the eye and ear method, and partly registered on the chronograph, it is a matter of some interest to compare the accuracy of the results obtained by the two methods. From observations made for this purpose shortly after the erection of the chronograph, in which the same transits were observed by the eye and ear method across six, and chronographically across ten, wires, we find:

Probable Error × sin N.P.D.

Method.	Single Wire.	Mean of Wires.
	s	s
Eye and Ear	±0·059	±0·024
Chronograph	±0·045	±0·014

On the average, transits of stars for the Catalogue were observed across seven wires by the eye and ear, and across ten wires by the chronographic, method. The probable errors of the means are therefore $\pm0^s\cdot022$ and $\pm0^s\cdot014$ respectively. It thus appears that the precision of the chronographic, relatively to that of the eye and ear, method as used at Oxford is in the ratio 11 : 7, a result which may be compared with the conclusion arrived at by Dunkin from a discussion of the Greenwich observations for 1853 and 1857 (*Monthly Notices*, xx, p. 87), the corresponding figures found by him being $\pm0^s\cdot028$ and $\pm0^s\cdot017$ deduced from transits across seven and nine wires respectively.

The probable error of a single determination of the clock correction is $\pm0^s\cdot028$, and as at least four stars have always been included in determining this quantity, the probable error arising from this cause is therefore not greater than $\pm0^s\cdot014$.

The probable error of a single determination of the right ascension of each of the close circumpolar stars used for azimuth, as computed from all the available material contained in the present catalogue, is exhibited in the following table:—

Probable Errors for Close Circumpolar Stars.

	N.P.D.	Above Pole.		Below Pole.	
		P.E. × sin N.P.D.	No. of Obs.	P.E. × sin N.P.D.	No. of Obs.
	° ′	s		s	
λ Ursae Min.	1 0	±0·012	29	±0·007	12
Groomb. 1119	1 4	0·009	10	0·014	17
Polaris	1 13	0·016	23	0·014	32
Bradley 1672	1 46	0·016	5	....	..
Groomb. 2283	2 23	0·009	5	....	..
Cephei 51 (Hev.)	2 48	0·010	13	0·013	30
δ Ursae Min.	3 23	±0·015	22	±0·010	13

While all these quantities are remarkably small there is one point which the table brings out clearly, viz. that, so far as the Oxford places are concerned, the observations of Polaris do not exhibit any greater accuracy than those of other close polar stars which are used in determining the azimuth error, as was found to be the case at Greenwich. (See Dr. Downing's paper on *Probable Errors of Greenwich Determinations of Right Ascension at Different Zenith Distances*, *Monthly Notices*, xlix, p. 359.)

Combining all the observations included in the above table we find

$$\pm 0^s{\cdot}013 \times \text{cosec N.P.D.}$$

as the probable error of a single observation in right ascension of a close circumpolar star.

The probable error of the right ascensions given in the Catalogue for stars, other than close circumpolars, was computed in the usual way from 2,601 separate observations of 227 stars, each of which had been observed not less than five times, and was found to be for a single observation $\pm 0^s{\cdot}028 \times$ cosec N.P.D. The final places are in general the means of three or more separate observations, and we have—

The P.E. of a Catalogue R.A. depending on three observations = $\pm 0^s{\cdot}016 \times$ cosec N.P.D.

The probable error of an observation in N.P.D. as found from 234 observations of the seven close circumpolar stars given above is $\pm 0''{\cdot}34$. For the other stars of the Catalogue, from 390 observations of 65 stars we find nearly the same figure, viz. $\pm 0''{\cdot}32$. Hence

The P.E. of a Catalogue N.P.D. depending on three observations = $\pm 0''{\cdot}18$.

The following table exhibits the probable errors of a single observation of R.A. and N.P.D. at various distances from the pole, and shows that in R.A. the precision of the observations is very nearly constant from the zenith down to 120° N.P.D. The smallness of the probable error corresponding to the zone 120°–122° is obviously an accident due to the small number of stars which it contains. As might be expected, too, the table shows a distinct falling off in accuracy in the observations of N.P.D. as the horizon is approached.

TABLE V.

PROBABLE ERRORS FOR ZONES OF 10° IN N.P.D.

Zone.	P.E. in R.A. × sin N.P.D.	No. of Obs.	No. of Stars.	P.E. in N.P.D.	No. of Obs.	No. of Stars.
° °	s			"		
10 — 20	...	...	...	±0·33	22	4
30 — 40	±0·028	5	1	0·22	5	1
40 — 50	0·023	7	1	0·33	7	1
50 — 60	0·026	78	9	0·35	6	1
60 — 70	0·025	403	37	0·28	111	18
70 — 80	0·029	528	41	0·26	38	6
80 — 90	0·030	654	56	0·34	119	19
90—100	0·029	477	35	0·35	44	8
100—110	0·028	295	26	0·40	33	6
110—120	0·030	143	18	±0·61	5	1
120—122	±0·019	11	2	...	...	...

Systematic Differences.—The places of the present catalogue have been compared with those of four other catalogues, viz. Professor Newcomb's *Catalogue of Fundamental Stars for* 1900, the *Radcliffe Catalogue for* 1890, the Greenwich *Second Ten-Year Catalogue for* 1890, and the *Albany A. G. Catalogue for* 1875.

In the following table the mean differences between the first of these and the *Radcliffe Catalogue*, 1900, in the sense Radcliffe 1900 *minus* Newcomb, are arranged according to N.P.D. in zones of 10° in width.

TABLE VI.

Comparison between the Radcliffe 1900, and Newcomb's *Fundamental*, *Catalogues* arranged in order of N.P.D.

N.P.D.	Δ R.A.	Δ R.A. × sin N.P.D.	Δ N.P.D.	No. of Stars.
° °	s	s	″	
0 — 10	+0·3	+0·014	−0·01	9
10 — 20	−0·02	−0·007	−0·24	9
20 — 30	−0·04	−0·020	−0·13	3
30 — 40	−0·16	−0·100	−0·40	2
40 — 50	−0·06	−0·040	−0·90	1
50 — 60	−0·074	−0·061	−0·23	13
60 — 70	−0·064	−0·058	−0·43	60
70 — 80	−0·054	−0·052	−0·46	69
80 — 90	−0·058	−0·058	−0·13	92
90—100	−0·063	−0·063	−0·34	38
100—110	−0·045	−0·043	−0·18	30
110—120	−0·054	−0·049	−0·33	21
120—125	−0·060	−0·051	+0·20	4
Weighted Mean.		s −0·052	″ −0·29	

Remarking that the differences in the zone 30°−50° N.P.D. depend upon only three stars, it will be seen that the differences in right ascension as reduced to the equator are practically constant from the zenith to within 7° or 8° of the south horizon, and almost exactly equal to the difference of the equinoxes (0s·054) to which the places of this Catalogue and those of Professor Newcomb's are referred (see p. xxv).

In comparing this Catalogue with the *Radcliffe Catalogue*, 1890, and with the Greenwich *Second Ten-Year Catalogue*, 1890, the differences have been collected in zones of 5° in N.P.D. Weights have been assigned to each of the differences by the formula $nn'/(n+n')$, n and n' being the number of observations of a star in the two Catalogues. The weighted means so obtained and the corresponding weights are given in Table VII on page xxx.

In this comparison the right ascensions of the Radcliffe Catalogue, 1890, have been corrected for the inequalities of the pivots by the application of the quantities given in Table II, p. xiv. Here a progressive change in the differences of R.A. of the two Radcliffe catalogues dependent on N.P.D., similar to, but smaller than, that found by Stone* to exist between the Radcliffe Catalogue, 1890, and the Greenwich Catalogue, 1880, is clearly indicated. The comparison with Newcomb and with the Greenwich Catalogue, 1890, seems to show that no sensible systematic error of this kind is to be attributed to the Radcliffe places for 1900, from which it would appear that while the corrections for pivot error have considerably improved the right ascensions of the *Radcliffe Catalogue*, 1890, they have not completely removed this systematic inequality. The mean difference between the two catalogues comes out −0s·016, or, if we take only stars south of 50° N.P.D. and exclude the zone 120°—125° N.P.D., in which the comparison stars are few, we find −0s·018. In the zone 45°—50° N.P.D. there are no stars for comparison. The mean difference in right ascension between Radcliffe, 1900, and Greenwich, 1890, is only −0s·002, while the results for the separate zones show no marked systematic change.

* See *Monthly Notices of R.A.S.*, Vol. lv, No. 5.

TABLE VII.

Comparison between the Radcliffe 1900, Radcliffe 1890, and Greenwich 1890, Catalogues.

Group.	Mean N.P.D. of Group.	Differences in R.A. × sin N.P.D.				Differences in N.P.D.			
		Rad. 1900 *minus* Rad. 1890.	Wt.	Rad. 1900 *minus* Gr. 1890.	Wt.	Rad. 1900 *minus* Rad. 1890.	Wt.	Rad. 1900 *minus* Gr. 1890.	Wt.
° °	° ′	s		s		″		″	
0 — 5	2 0	+0·006	160	+0·001	205	−0·11	169	−0·06	228
5 — 10	8 0	+0·015	2	+0·007	3	−0·30	4	+0·30	5
10 — 15	13 0	+0·032	4	−0·011	5	−0·47	9	+0·10	12
15 — 20	17 30	+0·034	10	+0·021	16	−0·30	23	−0·20	41
20 — 25	22 0	+0·058	6	+0·023	7	−0·18	11	+0·08	12
25 — 30	27 0	−0·038	4	+0·019	7	+0·30	6	−0·21	8
30 — 38½	37 0	−0·047	2	−0·042	5	+0·40	2	−0·24	5
38½— 45	39 30	−0·075	6	−0·042	8	−0·40	6	−0·60	8
45 — 50	...	...	...	...	...	...	...	...	...
50 — 55	52 30	−0·069	18	−0·034	35	+0·20	12	−0·37	27
55 — 60	58 0	−0·031	30	−0·003	54	+0·58	20	−0·21	33
60 — 65	62 30	−0·038	121	−0·012	265	+0·24	70	−0·59	202
65 — 70	67 30	−0·033	161	−0·009	365	+0·25	92	−0·62	288
70 — 75	72 30	−0·039	195	+0·002	417	+0·16	95	−0·71	297
75 — 80	77 30	−0·030	205	−0·002	310	+0·24	82	−0·65	178
80 — 85	82 30	−0·032	254	−0·001	346	+0·50	86	−0·49	176
85 — 90	87 30	−0·020	295	−0·003	412	+0·10	171	−0·44	296
90 — 95	92 0	−0·020	199	+0·006	181	+0·11	86	−0·76	76
95 —100	97 30	+0·001	212	−0·005	215	+0·21	68	−0·60	78
100 —105	102 30	+0·017	93	+0·003	91	+0·02	30	−0·56	34
105 —110	107 30	+0·012	137	+0·021	143	+0·30	48	−0·60	62
110 —115	112 30	+0·029	77	+0·011	68	+0·30	43	−0·70	38
115 —120	117 30	+0·022	59	−0·024	91	−0·33	39	−0·91	73
120 —125	122 0	+0·031	13	−0·028	10	+0·25	12	−0·02	9
Weighted Means and Sums.	° ° 0—125	s −0·016	2263	s −0·002	3259	...	...	...	...
Weighted Means and Sums.	° ° 50—120	s −0·018	2056	s −0·003	2993	″ +0·20	942	″ −0·60	1858

In N.P.D. the agreement between the two Radcliffe Catalogues is good, the mean difference for the range 50° to 120° N.P.D. being 0″·20. On the other hand, the comparison with Greenwich, 1890, shows a distinct systematic change depending on N.P.D. very similar to that found by Stone to exist between the Radcliffe, 1890, and the Greenwich, 1880, N.P.D.s. If the corrections given on p. 26 of the Introduction to the Greenwich Catalogue, 1890, to reduce to the Poulkova refractions and colatitude 38° 31′ 21″·75, are applied to the Greenwich N.P.D.s, these differences are very much diminished, but the variation dependent on N.P.D. does not entirely disappear. In this connexion it should be remembered that the Greenwich N.P.D.s have had a correction applied for the R—D discordance, which has practically the effect of rendering them the mean of the results obtained by direct and reflected observations. On the other hand, the Radcliffe places are deduced from the direct observations without any correction of this sort whatever, the whole of the R—D discordance being thrown on the reflected results. As already pointed out, the Oxford observations afford very little evidence for a term varying with sin Z.D. in the expression for R−D, and a constant, amounting to 0″·30, has been found to represent closely the differences between the

direct and reflected observations. Without entering into any discussion as to whether the mode of dealing with this discordance adopted at Greenwich is justified or not, it is interesting to remark that if the correction for the R—D discordance had not been applied to the Greenwich results, a comparison of the observations at Greenwich and Oxford would have shown no trace of this systematic difference. The effect of the correction for the R—D discordance at Greenwich cannot be entirely eliminated without going into the computations in detail, as the adopted zenith point of the Greenwich circle depends essentially on direct and reflected observations of stars, but as stars are observed for this purpose both north and south of the zenith, the mean effect of the discordance on the places of the Greenwich Catalogue introduced in this way must be small. If we take the values of this correction as given for the years 1887 to 1896 inclusive (see Greenwich *Second Ten-Year Catalogue*, 1890, Introduction, p. 20), we find that, as a mean value representing the whole period, the variable part of this correction is given by the expression

$$+0''\cdot58 \sin \text{Z.D.}$$

The value of this term at the mean N.P.D. of the various groups is given in the second column of the following Table. In the third column are given the differences Radcliffe 1900 *minus* Greenwich 1890. Adding these two together we get the quantities in the fourth column, which represent very closely the differences between the direct observations at Oxford and Greenwich. The mean of these is $-0''\cdot22$. The differences from this mean as given in the last column no longer show a sensible variation.

TABLE VIII.

DIFFERENCES OF N.P.D. RADCLIFFE 1900 *minus* GREENWICH 1890 (DIRECT).

Group.	″ 0·58 sin. Z.D.	Rad. 1900 *minus* Gr. 1890.	Rad. Direct *minus* Gr. Direct.	Difference from Mean.
° °	″	″	″	″
0 — 5	−0·36	−0·06	−0·42	−0·20
5 — 10	−0·29	+0·30	+0·01	+0·23
10 — 15	−0·25	+0·10	−0·15	+0·07
15 — 20	−0·21	−0·20	−0·41	−0·19
20 — 25	−0·16	+0·08	−0·08	+0·14
25 — 30	−0·11	−0·21	−0·32	−0·10
30 — 38½	−0·01	−0·24	−0·25	−0·03
38½— 45	+0·01	−0·60	−0·59	−0·37
45 — 50	...	...	...	...
50 — 55	+0·14	−0·37	−0·23	−0·01
55 — 60	+0·20	−0·21	−0·01	+0·21
60 — 65	+0·24	−0·59	−0·35	−0·13
65 — 70	+0·28	−0·62	−0·34	−0·12
70 — 75	+0·33	−0·71	−0·38	−0·16
75 — 80	+0·37	−0·65	−0·28	−0·06
80 — 85	+0·40	−0·49	−0·09	+0·13
85 — 90	+0·44	−0·44	0·00	+0·22
90 — 95	+0·47	−0·76	−0·29	−0·07
95 —100	+0·50	−0·60	−0·10	+0·12
100 —105	+0·52	−0·56	−0·04	+0·18
105 —110	+0·54	−0·60	−0·06	+0·16
110 —115	+0·56	−0·70	−0·14	+0·08
115 —120	+0·57	−0·91	−0·34	−0·12

The differences for the zones 50°–120° N.P.D.—outside these limits either t e common to the pairs of catalogues or they are too few to afford a reliable co - e collected in Six-Hour groups, as given in the following Tables, Nos. IX and X.] t groups the same tendencies will be noticed as have already been shown to in table (Table VII), but there is very little, if any, indication of a systema c fr to group depending on right ascension.

TABLE IX.

COMPARISON BETWEEN THE RADCLIFFE CATALOGUES, 1900 AND 1890; FOR SIX-HOUR GROUPS.

Differences of R.A. (*Rad.* 1900 *minus Rad.* 1890) × *Sin N.P.D.*

N.P.D. of Group.	0^h to 6^h		6^h to 12^h		12^h to 18^h		18^h to 24^h	
	Diff.	Wt.	Diff.	Wt.	Diff.	Wt.	Diff.	Wt.
° °	s		s		s		s	
50 - 55	−0·071	9	...	...	...	...	−0·066	9
55 - 60	−0·076	2	−0·029	9	−0·031	15	−0·008	4
60 - 65	−0·028	21	−0·054	27	−0·036	48	−0·031	25
65 - 70	−0·035	68	−0·035	81	+0·037	2	−0·032	10
70 - 75	−0·034	59	−0·037	58	−0·044	67	−0·047	11
75 - 80	−0·012	38	−0·044	73	−0·039	41	−0·017	53
80 - 85	−0·017	75	−0·032	89	−0·055	40	−0·038	50
85 - 90	−0·015	55	−0·028	59	−0·034	95	−0·002	86
90 - 95	−0·014	49	−0·027	22	−0·038	64	−0·002	64
95-100	+0·011	66	−0·010	20	−0·007	63	+0·001	63
100-105	+0·035	16	+0·002	16	+0·011	43	+0·029	18
105-110	+0·005	11	+0·022	19	+0·006	68	+0·021	39
110-115	+0·058	19	+0·005	24	+0·008	25	+0·087	9
115-120	...	...	+0·067	17	−0·004	14	+0·008	28
Weighted Means.	s −0·013		s −0·026		s −0·024		s −0·006	

Differences of N.P.D. (*Rad.* 1900 *minus Rad.* 1890).

N.P.D. of Group.	0^h to 6^h Diff.	Wt.	6^h to 12^h Diff.	Wt.	12^h to 18^h Diff.	Wt.	18^h to 24^h Diff.	Wt.
° °	″		″		″		″	
50 - 55	+0·52	5	...	...	...	...	−0·03	7
55 - 60	−0·20	3	+0·70	6	+0·30	7	+1·50	4
60 - 65	+0·29	19	+0·46	11	+0·19	20	+0·16	20
65 - 70	+0·31	44	+0·26	40	+0·60	2	−0·30	6
70 - 75	+0·31	41	−0·03	25	+0·21	22	−0·21	7
75 - 80	+0·29	26	+0·42	28	−0·13	11	+0·09	17
80 - 85	+0·23	28	+0·76	30	+0·63	10	+0·44	18
85 - 90	−0·11	36	+0·25	35	+0·18	41	+0·09	59
90 - 95	+0·07	19	+0·02	18	+0·03	34	+0·41	15
95-100	+0·18	24	+0·70	4	−0·06	21	+0·43	19
100-105	+0·10	6	+0·13	7	+0·09	12	−0·38	5
105-110	+0·20	4	+0·16	7	+0·21	20	+0·50	17
110-115	+0·78	12	−0·66	10	+0·31	13	+0·77	8
115-120	...	...	−0·35	16	−0·32	10	−0·31	13
Weighted Means.	″ +0·23		″ +0·23		″ +0·13		″ +0·20	

TABLE X.

Comparison between the Radcliffe Catalogue, 1900, and Greenwich Catalogue, 1890; for Six-Hour Groups.

Differences of R.A. (Rad. 1900 minus Gr. 1890) × Sin N.P.D.

N.P.D. of Group.	0h to 6h		6h to 12h		12h to 18h		18h to 24h	
	Diff.	Wt.	Diff.	Wt.	Diff.	Wt.	Diff.	Wt.
° °	s		s		s		s	
50-55	−0·034	14	...	...	+0·016	4	−0·046	17
55-60	−0·051	3	−0·020	14	+0·009	25	+0·002	12
60-65	−0·008	68	−0·019	86	−0·010	70	−0·011	41
65-70	−0·010	174	−0·009	169	+0·037	3	−0·006	19
70-75	+0·008	169	+0·003	145	−0·010	88	−0·015	15
75-80	+0·011	65	−0·010	120	−0·015	53	+0·008	72
80-85	+0·002	105	+0·005	118	−0·011	62	−0·008	61
85-90	−0·012	94	+0·004	95	−0·012	133	+0·012	90
90-95	−0·001	47	+0·002	11	+0·003	55	+0·014	68
95-100	−0·001	62	−0·020	20	+0·003	66	−0·010	67
100-105	−0·008	18	−0·011	13	+0·001	43	+0·028	17
105-110	+0·024	12	+0·031	18	+0·018	72	+0·023	41
110-115	+0·019	13	+0·017	19	+0·006	27	+0·001	9
115-120	...	...	+0·017	10	−0·049	26	−0·020	55
Weighted Means.	s −0·002		s −0·003		s −0·005		s 0·000	

Differences of N.P.D. (Rad. 1900 minus Gr. 1890).

N.P.D. of Group.	0h to 6h		6h to 12h		12h to 18h		18h to 24h	
	Diff.	Wt.	Diff.	Wt.	Diff.	Wt.	Diff.	Wt.
° °	"		"		"		"	
50-55	−0·20	11	...	...	−0·90	4	−0·34	12
55-60	−0·50	4	−0·14	8	−0·70	9	+0·22	12
60-65	−0·47	69	−0·68	65	−0·76	32	−0·53	36
65-70	−0·62	145	−0·68	118	+0·10	6	−0·47	19
70-75	−0·71	160	−0·72	98	−0·64	28	−0·76	11
75-80	−0·50	55	−0·70	73	−0·70	16	−0·78	34
80-85	−0·54	60	−0·35	62	−0·69	27	−0·49	27
85-90	−0·44	78	−0·26	72	−0·52	86	−0·53	60
90-95	−0·77	22	−0·52	8	−0·82	27	−0·75	19
95-100	−0·59	28	−0·30	5	−0·68	23	−0·58	22
100-105	−0·10	8	−0·56	5	−0·59	14	−1·00	7
105-110	−0·66	5	−0·30	9	−0·62	24	−0·69	24
110-115	−0·66	7	−1·25	8	−1·06	14	+0·32	9
115-120	...	...	−0·88	9	−0·96	22	−0·89	42
Weighted Means.	" −0·58		" −0·59		" −0·67		" −0·58	

In comparing the places of the Radcliffe Catalogue, 1900, with those of the Albany (A.G.) Catalogue, 1875, the values of the precession and secular variation given in the Albany Catalogue (which also depend on Struve's constants) were used for bringing up the Albany places to 1900·0. The proper motions of the present Catalogue were adopted, except in the case of No. 162 (Albany 720), for which no proper motion is given in this work. The Radcliffe place for 1900,

however, confirms the proper motion as given in the Albany Catalogue, viz. $+0^{s}{\cdot}013$ in R.A. and $+0''{\cdot}11$ in N.P.D., and these values have accordingly been used in bringing up the Albany place.

TABLE XI.

Comparison between the Radcliffe Catalogue, 1900, and Albany (A.G.) Catalogue, 1875.

Radcliffe *minus* Albany.

	Mean Diffs. of R.A.	Mean Diffs. of N.P.D.	Number of Stars.
	s	″	
Constant.	−0·069	−0·32	
h h	s	″	
0 − 1	+0·011	−0·03	24
1 − 2	+0·015	+0·02	33
2 − 3	+0·043	−0·04	31
3 − 4	+0·015	−0·08	28
4 − 5	+0·028	−0·24	28
5 − 6	−0·009	−0·14	52
0 − 6	+0·014	−0·09	196
6 − 7	−0·019	−0·07	50
7 − 8	−0·028	+0·28	39
8 − 9	−0·045	+0·13	30
9−10	−0·046	−0·09	31
10−11	−0·025	−0·15	28
11−12	−0·015	+0·35	28
6−12	−0·029	+0·07	206
12−13	−0·024	−0·16	23
13−14	−0·047	−0·04	29
14−15	−0·040	+0·07	28
15−16	−0·008	+0·19	35
16−17	+0·006	+0·02	29
17−18	−0·012	+0·01	51
12−18	−0·019	+0·03	195
18−19	+0·016	−0·09	54
19−20	+0·030	−0·03	40
20−21	+0·037	−0·04	39
21−22	+0·047	0·00	33
22−23	+0·027	+0·07	36
23−24	+0·033	+0·16	31
18−24	+0·030	0·00	233

There are 830 stars common to the Radcliffe and Albany Catalogues distributed in right ascension, as shown in Table XI. As these stars are all included in the zone 85° to 89° N.P.D.—or, to be more exact, between 84° 50′ and 89° 10′ of N.P.D. for the epoch 1855—it has not been necessary to separate them according to N.P.D. The mean differences of the two catalogues are $-0^s.069$ in R.A. and $-0''.32$ in N.P.D., as given at the head of the Table, and the differences from these means corresponding to each hour of R.A., and to each Six-Hour group, are exhibited in the columns of the Table.

In N.P.D. there is very little evidence of a systematic change in these residuals, unless it be one of eight hours period and about $0''.15$ amplitude, which is faintly indicated. But in R.A. we see a clearly marked variation with a period of 24 hours. In his paper, entitled *Ergebnisse aus Vergleichungen der Zonencataloge der Astronomischen Gesellschaft unter einander und mit dem Romberg'schen Catalog für* 1875, which appeared in the *Astronomische Nachrichten*, Nos. 3842-3-4, Professor Auwers publishes a comparison between the Albany places and those of Romberg's Poulkova Catalogue, 1875. The ordinates of the curve found by Professor Auwers to represent the differences, Albany *minus* Romberg, will, if their signs are changed, be found to exhibit a striking similarity to the values given in Table XI for the differences, Radcliffe *minus* Albany. It thus appears that the right ascensions of the Radcliffe Catalogue, 1900, agree very closely with those of Romberg's Poulkova Catalogue, which was selected by Professor Auwers, in the paper referred to, for comparison with the various A.G. Zones as being a catalogue 'von anerkannt grosser Genauigkeit.'

Constellations.

As in the *Radcliffe Catalogue for* 1890, the nomenclature and constellations adopted by Francis Baily in the British Association Catalogue have been generally followed.

Magnitude.

In all cases where the magnitudes given in the Catalogue depend upon observations made at this Observatory the number of estimations on which the magnitude is based follows in the next column. In other cases, the given magnitudes have been extracted from published lists. All the unmarked magnitudes have been taken from the Harvard publications, chiefly from the Harvard Photometric Durchmusterung (*Annals*, Vol. XLV), with a few exceptions, which have been taken from the Harvard Photometry (*Annals*, Vol. XIV). Those marked with an asterisk are from the Bonner Durchmusterung; those with a dagger from Struve's Double Stars (*Dun Echt Observatory Publications*, Vol. I); and those with a double dagger (Nos. 955 and 956 only) from the Argentine General Catalogue, 1875.

The information with regard to the limits of magnitude and the periods of variable stars, given in the footnotes on the left-hand pages of the Catalogue, are, with the exception of that relating to No. 1052, taken from Chandler's 'Third Catalogue of Variable Stars' (*Astronomical Journal*, No. 379), or his 'Revision of Elements of Third Catalogue of Variable Stars' (*Astronomical Journal*, No. 553). The elements for No. 1052 are Pickering's, and are taken from the *Astronomische Nachrichten*, No. 3347. The remarks on colour, magnitude, and position contained in these footnotes are extracted from the observers' original note-books. The footnotes on the right-hand pages refer to the authority for the proper motion adopted.

Miscellaneous.

The observations on which the places of this catalogue are founded were made by Messrs. Walter Wickham, F.R.A.S., William Henry Robinson, and Ernest Edgar McClellan. All three are skilled observers, with long experience in this class of work. To this fact is largely due the precision of the results. In the table of Personal Equations given on p. xx they are denoted by the letters W, R, and C respectively.

Mr. Wickham's duties as First Assistant are of a varied kind, and, where work of an unexpected character or out of the ordinary routine of observations was required, I have generally had recourse to his services. There have been many interruptions of this kind in recent years, and, in particular, the work in connexion with the erection and preliminary trials of the new equatorial telescope has made serious inroads upon his time. He has nevertheless taken an active share in the transit circle observations. The ordinary adjustments of the transit circle have been entirely in his charge. He has rendered valuable assistance in examining and checking the computations, and in reading the proof sheets.

The labour of reducing the observations and preparing the catalogue has fallen principally upon Mr. Robinson, Second Assistant, and to this he has devoted himself with indefatigable assiduity and persevering skill. In some parts of the work he has had the assistance, first, of Mr. W. Jenkins, who filled the post of computer at this Observatory from October 1892 till April 1903, and later, of one or both of the computers—Messrs. J. G. Balk and R. Harris—who succeeded Mr. Jenkins. In addition to the ordinary routine of the observations, Mr. Robinson has executed a large number of miscellaneous computations arising out of the work.

Mr. McClellan, Third Assistant, has general charge of the meteorological department. He is also our principal photographer, in which capacity his duties absorb more and more of his time, as the photographic work with the new equatorial develops. He has taken his share of the active work at the telescope, but the photographic work and the daily routine of meteorological reductions have prevented his giving much assistance in the astronomical computations.

The present work owes its existence to the liberality of the Radcliffe Trustees. In the year 1772, in response to a request made to them by the University Authorities, the Radcliffe Trustees of that day founded and equipped the Observatory, and their successors have ever since maintained it at a high level of efficiency. The principal results of the astronomical labours carried on here since 1840 (not to mention the meteorological records, which constitute a large proportion of the total output of the Observatory) are contained in a series of forty-eight volumes of *Radcliffe Observations*, giving an account of the work done here from year to year and, in a more collected form, in four General Catalogues of Stars, viz. those of 1845, 1860, 1890, and the present work.

The observations made before 1840 have never been completely reduced nor published. They are, however, far from inconsiderable. In the form of neat MS. records they are now carefully preserved—to the number of at least 130,000 transits and 60,000 zenith distances—amongst the archives of the Observatory. In the *Monthly Notices of the R.A.S.*, Vol. lx, p. 265, will be found a paper under the title *Note on the Unpublished Observations made at the Radcliffe Observatory, Oxford, between the years* 1774 *and* 1838; *with some Results for the year* 1774, from which, though it has been very much curtailed by the exigencies of space, some idea may be formed of the value of these old observations. There is also a paper bearing on the subject, by the late Mr. Stone, in the *Monthly Notices*, Vol. lv, p. 409, entitled *A Determination of the Mean N.P.D.* 1790 *January* 0 *of* γ *Draconis from Observations made at Oxford by Dr. Hornsby*. With the exception of a short note in *The Observatory* magazine for 1901, p. 453, entitled *Dr. Downing's Revision of Taylor's Madras Catalogue and the policy of Reducing Old Observations*, and four letters in the same magazine for 1902, pp. 90, 127, 165, and 166, these two papers contain, so far as I know, all the information on the subject at present published.

ARTHUR A. RAMBAUT.

Radcliffe Observatory, Oxford.
February 24, 1906.

GENERAL CATALOGUE OF STARS

FOR

1900·0,

FROM OBSERVATIONS

MADE AT THE

RADCLIFFE OBSERVATORY, OXFORD,

1894 TO 1903.

A. A. RAMBAUT.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1	Piscium	6·9	1	97·19	3	0 0 14·92	+3·0728	+0·0035		1
2	21 Andromedae α	2·3	...	97·31	8	0 3 12·96	+3·0829	+0·0184	+0·0095	2
3	Piscium	7·5	2	02·80	3	0 3 44·79	+3·0728	+0·0022		3
4	Piscium	8·0	1	02·86	3	0 4 47·19	+3·0748	+0·0044		4
5	Piscium	7·6	1	02·92	3	0 5 33·26	+3·0736	+0·0030		5
6	88 Pegasi γ	2·8	...	97·93	13	0 8 5·10	+3·0850	+0·0102	−0·0007	6
7	Piscium	6·8	...	98·17	3	0 8 40·22	+3·0735	+0·0028		7
8	Piscium	7·1	...	98·84	3	0 9 28·88	+3·0734	+0·0028		8
9	35 Piscium	5·8	...	97·94	3	0 9 49·69	+3·0811	+0·0068	+0·0054	9
10	Piscium	7·5	2	02·81	3	0 10 30·23	+3·0784	+0·0053		10
11	Piscium	7·0	...	02·86	3	0 10 49·25	+3·0768	+0·0044		11
12	36 Piscium	6·2	...	97·86	3	0 11 25·69	+3·0817	+0·0066	−0·0036	12
13	Piscium	7·3	...	98·84	3	0 11 31·72	+3·0742	+0·0032	+0·0001	13
14	Piscium	6·3	...	97·47	3	0 12 39·47	+3·0742	+0·0032	+0·0047	14
15	Ceti	7·3	1	02·92	3	0 12 56·18	+3·0728	+0·0027		15
16	Piscium	7·5	1	02·87	3	0 13 0·13	+3·0770	+0·0043		16
17	8 Ceti ι	3·7	...	98·35	9	0 14 19·92	+3·0589	−0·0022	−0·0032	17
18	41 Piscium d	5·4	...	97·88	3	0 15 27·05	+3·0848	+0·0068	−0·0013	18
19	44 Piscium	6·1	...	98·52	9	0 20 16·50	+3·0756	+0·0038	−0·0028	19
20	Piscium	6·9	...	97·26	3	0 21 8·20	+3·0798	+0·0048		20
21	Piscium	6·3	1	97·54	3	0 23 9·78	+3·0956	+0·0083	+0·0040	21
22	12 Ceti	6·0	...	97·82	12	0 24 56·07	+3·0613	+0·0010	−0·0003	22
23	Piscium	7·3	1	97·20	3	0 25 0·15	+3·0837	+0·0056		23
24	51 Piscium	6·7	1	97·90	3	0 27 14·13	+3·0905	+0·0068	+0·0008	24
25	Piscium	8·1*	...	98·76	3	0 28 58·97	+3·0887	+0·0064		25
26	Ceti	8·3*	...	02·80	3	0 29 16·37	+3·0741	+0·0038		26
27	Piscium	6·7	1	97·50	3	0 32 21·47	+3·0812	+0·0050	+0·0048	27
28	30 Andromedae ε	4·5	1	98·43	8	0 33 16·13	+3·1789	+0·0211	−0·0184	28
29	Ceti	8·2*	...	02·87	3	0 33 40·64	+3·0741	+0·0040		29
30	Piscium	7·9	1	02·86	3	0 33 59·62	+3·0816	+0·0051	+0·0482	30
31	Piscium	7·7	1	97·52	3	0 34 38·03	+3·0836	+0·0054		31
32	Piscium	8·3	1	02·53	3	0 37 14·05	+3·0864	+0·0059		32
33	16 Ceti β	2·3	...	97·73	10	0 38 34·19	+2·9976	−0·0053	+0·0147	33
34	Ceti	8·2*	...	02·87	3	0 39 57·18	+3·0778	+0·0048	−0·0010	34
35	Ceti	7·8*	...	02·83	3	0 40 46·38	+3·0729	+0·0042		35
36	58 Piscium	5·7	1	97·56	3	0 41 48·36	+3·1217	+0·0103	+0·0017	36
37	Piscium	9·0	1	95·83	3	0 43 1·98	+3·0985	+0·0074		37
38	62 Piscium	6·0	1	97·91	3	0 43 5·97	+3·1023	+0·0078	+0·0050	38
39	Piscium	5·0	1	97·95	3	0 43 8·21	+3·0936	+0·0068	+0·0508	39
40	63 Piscium δ	4·5	...	98·10	10	0 43 29·56	+3·1039	+0·0080	+0·0035	40
41	Piscium	8·0*	...	98·16	3	0 44 29·72	+3·0992	+0·0074		41
42	Piscium	8·7*	...	99·86	4	0 45 1·03	+3·1010	+0·0076		42
43	Ceti	7·7	...	98·78	3	0 45 55·90	+3·0830	+0·0056		43
44	Piscium	6·5	...	97·26	3	0 46 9·25	+3·0860	+0·0059	0·0000	44
45	Piscium	9·0	1	97·84	3	0 47 30·00	+3·1022	+0·0077		45

9. Double; brighter observed. Companion follows about 0s·5 and is south.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1	97·19	3	86 57 3·0	− 20·052	+ 0·009			47229		8243			+ 2 4752	1
2	02·42	13	61 27 41·9	− 20·050	+ 0·015	+ 0·156	3215	47319			10	15	+ 28 4	2
3	02·80	3	89 51 50·4	− 20·049	+ 0·016			47342	1267		14		− 0 6	3
4	02·86	3	85 43 26·6	− 20·048	+ 0·018			47373	22	17			+ 4 8	4
5	02·92	3	88 30 4·1	− 20·046	+ 0·019			16	45	21			+ 1 12	5
6	01·60	7	75 22 20·7	− 20·040	+ 0·024	+ 0·013	1	107	92		30	52	+ 14 14	6
7	98·17	3	89 10 19·8	− 20·038	+ 0·026			134	99				+ 0 19	7
8	98·84	3	89 15 32·0	− 20·035	+ 0·027			163					+ 0 22	8
9	97·94	3	81 44 3·5	− 20·034	+ 0·028	+ 0·021	5	182	119				+ 8 19	9
10	02·81	3	84 42 43·4	− 20·031	+ 0·029				129	34			+ 5 25	10
11	02·86	3	86 18 14·9	− 20·030	+ 0·030			205		36			+ 3 26	11
12	97·86	3	82 18 54·2	− 20·027	+ 0·031	+ 0·009	7	218	143			68	+ 7 27	12
13	98·84	3	88 42 20·2	− 20·027	+ 0·031	+ 0·004		225	148	38			+ 1 28	13
14	97·47	3	88 52 1·8	− 20·022	+ 0·033	− 0·021		260		45	49	75	+ 0 28	14
15	02·92	3	89 56 19·3	− 20·020	+ 0·034			310			52		− 0 37	15
16	02·87	3	86 45 31·8	− 20·020	+ 0·034			279	179	47			+ 2 32	16
17	95·85	4	99 22 41·8	− 20·013	+ 0·036	+ 0·032	14	322			58	82	− 9 48	17
18	97·88	3	82 21 54·7	− 20·007	+ 0·039	− 0·019	16	366	223			92	+ 7 36	18
19	97·63	4	88 36 50·5	− 19·973	+ 0·048	+ 0·011	25	512	298	75	76	113	+ 1 57	19
20	97·26	3	86 43 41·6	− 19·967	+ 0·050			546	312	79			+ 3 46	20
21	97·54	3	80 21 28·4	− 19·950	+ 0·054	+ 0·200		617	340			121	+ 9 47	21
22	97·72	5	94 30 35·2	− 19·933	+ 0·057	+ 0·009	38	669	371		95	129	− 4 54	22
23	97·20	3	85 41 35·0	− 19·933	+ 0·058			670	372	88			+ 4 63	23
24	97·90	3	83 35 48·6	− 19·911	+ 0·062	− 0·022	44	763	414			148	+ 6 64	24
25	98·76	3	84 35 39·7	− 19·892	+ 0·065			828	450	110			+ 5 69	25
26	02·80	3	89 32 55·4	− 19·889	+ 0·066				457				+ 0 77	26
27	97·50	3	87 24 48·2	− 19·853	+ 0·072	+ 0·064		954	507	128			+ 2 80	27
28	03·18	15	61 13 52·1	− 19·841	+ 0·076	+ 0·251	56	976			122	194	+ 28 103	28
29	02·87	3	89 36 5·9	− 19·836	+ 0·074				527				+ 0 96	29
30	02·86	3	87 25 26·7	− 19·832	+ 0·075	− 0·277		999	530	142			+ 2 84	30
31	97·52	3	86 53 52·0	− 19·824	+ 0·076			1027	544	144			+ 2 86	31
32	02·53	3	86 22 50·6	− 19·788	+ 0·081			1118		164			+ 3 93	32
33	00·62	3	108 32 7·6	− 19·769	+ 0·082	− 0·034	70	1155			140	227	− 18 115	33
34	02·87	3	88 44 44·4	− 19·748	+ 0·086	+ 0·630		1198	649	182			+ 1 131	34
35	02·83	3	89 58 4·4	− 19·736	+ 0·088			1225	662				− 0 110	35
36	97·56	3	78 34 17·7	− 19·720	+ 0·091	+ 0·013	76	1254	681			245	+ 11 96	36
37	95·83	3	84 6 37·4	− 19·700	+ 0·093								+ 5 107	37
38	97·91	3	83 14 45·2	− 19·699	+ 0·093	− 0·004	84	1300	708			258	+ 6 105	38
39	97·95	3	85 14 0·6	− 19·698	+ 0·093	+ 1·138		1299		204		261	+ 4 123	39
40	02·23	3	82 57 32·2	− 19·692	+ 0·094	+ 0·037	85	1312	714		161	265	+ 6 107	40
41	98·16	3	84 8 16·6	− 19·675	+ 0·096								+ 5 109	41
42	00·51	5	83 49 5·6	− 19·667	+ 0·097								+ 5 111	42
43	98·78	3	87 47 56·2	− 19·651	+ 0·098			1403		216			+ 1 149	43
44	97·26	3	87 9 26·5	− 19·647	+ 0·099	+ 0·058	91	1407	760	217		281	+ 2 118	44
45	97·84	3	83 52 41·0	− 19·623	+ 0·102				787				+ 5 117	45

13, 14, 39. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 21, 34. Authority for Proper Motions: Porter.
27, 30. Authority for Proper Motions: Boss.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
46	Ceti	5·6	...	94·86	5	0 47 45·97	+ 2·9464	− 0·0077		46
47	20 Ceti	4·9	...	99·35	5	0 47 53·72	+ 3·0646	+ 0·0037	− 0·0022	47
48	Piscium	7·3	1	97·56	3	0 48 10·43	+ 3·0900	+ 0·0064	− 0·0039	48
49	Ceti	7·9*	...	02·84	3	0 49 53·80	+ 3·0740	+ 0·0048		49
50	37 Andromedae ... μ	4·0	...	00·23	6	0 51 11·94	+ 3·3038	+ 0·0308	+ 0·0141	50
51	Ceti	7·3	...	97·88	3	0 52 31·36	+ 3·0793	+ 0·0054		51
52	Ceti	7·2	...	94·86	3	0 53 47·96	+ 2·9585	− 0·0050	+ 0·0016	52
53	71 Piscium ... ... ε	4·4	...	98·80	17	0 57 45·08	+ 3·1157	+ 0·0089	− 0·0070	53
54	26 Ceti	6·0	1	97·95	3	0 58 40·10	+ 3·0776	+ 0·0055	+ 0·0064	54
55	Ceti	7·3	...	98·84	3	0 59 34·87	+ 3·0834	+ 0·0060		55
56	73 Piscium	6·5	1	97·96	3	0 59 41·61	+ 3·1036	+ 0·0078	+ 0·0008	56
57	Piscium	8·0*	...	98·95	3	1 0 32·01	+ 3·0951	+ 0·0071		57
58	77 Piscium	6·4	...	97·97	3	1 0 38·69	+ 3·0995	+ 0·0074	− 0·0008	58
59	Piscium	8·2*	...	97·97	3	1 0 40·89	+ 3·0995	+ 0·0074	− 0·0007	59
60	75 Piscium	6·3	...	97·97	3	1 1 17·88	+ 3·1505	+ 0·0119	+ 0·0003	60
61	29 Ceti	6·7	...	98·84	3	1 2 50·16	+ 3·0820	+ 0·0060	+ 0·0072	61
62	Piscium	6·9	...	97·37	3	1 3 8·04	+ 3·1328	+ 0·0102	+ 0·0004	62
63	80 Piscium ... ... ε	5·6	...	97·99	3	1 3 12·97	+ 3·1053	+ 0·0079	− 0·0195	63
64	43 Andromedae ... β	2·4	...	99·89	9	1 4 7·74	+ 3·3321	+ 0·0288	+ 0·0144	64
65	Cassiopeiae	8·8	3	97·17	3	1 5 4·31	+ 3·5484	+ 0·0529		65
66	33 Ceti	6·5	2	97·97	3	1 5 24·73	+ 3·0853	+ 0·0064	− 0·0017	66
67	35 Ceti	6·8	...	98·90	3	1 7 22·87	+ 3·0859	+ 0·0065	− 0·0132	67
68	86 Piscium ... ... ζ^1	5·3	...	00·48	4	1 8 30·27	+ 3·1214	+ 0·0092	+ 0·0075	68
69	Piscium	8·1*	...	02·54	3	1 8 40·35	+ 3·1045	+ 0·0079		69
70	37 Ceti	5·2	...	94·85	3	1 9 21·65	+ 3·0135	+ 0·0015	+ 0·0055	70
71	88 Piscium	6·2	...	97·94	3	1 9 30·15	+ 3·1180	+ 0·0089	− 0·0024	71
72	Ceti	6·6	...	98·89	3	1 10 27·50	+ 3·0754	+ 0·0058		72
73	Piscium	7·8*	...	98·91	3	1 12 1·10	+ 3·0834	+ 0·0065		73
74	89 Piscium ... ... f	5·4	...	97·96	3	1 12 38·35	+ 3·0952	+ 0·0073	− 0·0049	74
75	Piscium	8·0*	...	98·98	3	1 14 13·65	+ 3·0933	+ 0·0072	+ 0·0090	75
76	Piscium	7·7	1	95·80	3	1 14 32·63	+ 3·1149	+ 0·0087		76
77	Piscium	6·8	...	97·99	3	1 16 2·44	+ 3·1575	+ 0·0117		77
78	Piscium	6·5	...	98·90	3	1 17 27·86	+ 3·0821	+ 0·0066	+ 0·0006	78
79	Piscium	7·0	1	98·98	3	1 17 32·70	+ 3·1054	+ 0·0081	− 0·0036	79
80	Piscium	9·4	1	00·91	3	1 18 9·90	+ 3·1118	+ 0·0085		80
81	Piscium	9·3	1	98·71	3	1 18 20·57	+ 3·1168	+ 0·0088		81
82	45 Ceti ... ... θ	3·9	...	00·89	4	1 19 1·44	+ 3·0036	+ 0·0020	− 0·0068	82
83	Piscium	8·5	2	02·60	3	1 19 57·06	+ 3·1122	+ 0·0086		83
84	Piscium	7·0	...	02·90	3	1 20 30·85	+ 3·0924	+ 0·0073		84
85	Piscium	9·0	2	98·26	3	1 21 8·27	+ 3·1143	+ 0·0087		85
86	Piscium	6·5	...	98·91	3	1 21 43·35	+ 3·0973	+ 0·0076		86
87	Ursae Minoris ... α^1	9·0	2	99·70	11	1 22 1·44	+ 24·8835	+ 19·8010		87
88	95 Piscium	7·2	1	98·96	3	1 22 28·24	+ 3·1126	+ 0·0086	− 0·0042	88
89	1 Ursae Minoris ... α	2·1	...	97·86	55	1 22 33·40	+ 25·0919	+ 20·0186	+ 0·1220	89
90	Piscium	6·4	...	97·95	3	1 23 8·08	+ 3·1347	+ 0·0100		90

65. A star (B.D. + 51° 244) following south is of magnitude 10·5, or one magnitude fainter than that given in the B.D.
76. Reddish. Much brighter than No. 45. The stars are both given in the B.D. as 8·7 magnitude.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
46	94·86	5	114 33 2·3	−19·618	+0·097			1477			179			46
47	00·63	3	91 41 13·7	−19·616	+0·101	+0·009	93	1474			180	298	−1 114	47
48	97·56	3	86 27 22·0	−19·611	+0·102	+0·024		1481		225			+3 120	48
49	02·84	3	89 45 4·6	−19·579	+0·105				825				+0 142	49
50	02·24	3	52 2 33·9	−19·554	+0·115	−0·049	101	1578			196	321	+37 175	50
51	97·88	3	88 45 19·5	−19·528	+0·110			1638	870	236			+0 149	51
52	94·86	3	110 10 21·5	−19·502	+0·109	+0·046		1691			211	345	−20 174	52
53	97·24	4	82 38 53·7	−19·419	+0·122	−0·039	113	1819	970		227	379	+7 153	53
54	97·95	3	89 10 9·0	−19·399	+0·122	+0·033	116	1853	987			392	+0 174	54
55	98·84	3	88 13 18·9	−19·378	+0·124			1879	1002	280			+1 203	55
56	97·96	3	84 52 47·1	−19·376	+0·125	+0·004	120		1005	281	232	396	+4 172	56
57	98·95	3	86 20 9·9	−19·357	+0·126				1019	284			+3 155	57
58	97·97	3	85 37 25·9	−19·354	+0·126	+0·119	124	1905		286	242	406	+4 175	58
59	97·97	3	85 37 21·7	−19·353	+0·127	+0·100	125	1908		287		407	+4 176	59
60	97·97	3	77 34 47·6	−19·339	+0·130	−0·036	127	1930	1038		246	410	+12 135	60
61	98·84	3	88 31 46·3	−19·303	+0·130	+0·438	133	1992	1071	303		421	+1 212	61
62	97·37	3	80 37 33·4	−19·296	+0·133	−0·020		2001	1075			424	+9 132	62
63	97·99	3	84 52 45·3	−19·294	+0·132	+0·174	136	2005		305	261	426	+4 190	63
64	01·67	8	54 54 34·3	−19·272	+0·142	+0·084	140	2029			266	433	+34 198	64
65	97·17	3	38 12 32·1	−19·249	+0·153								+51 243	65
66	97·97	3	88 5 11·1	−19·241	+0·135	+0·004	148	2093	27	318		442	+1 221	66
67	98·90	3	88 3 23·9	−19·192	+0·139	+0·130	154	2160	61	325		455	+1 223	67
68	01·95	3	82 57 11·5	−19·163	+0·142	+0·051	158	2187	75		284	461	+6 174	68
69	02·54	3	85 23 14·9	−19·159	+0·142				80	331			+4 212	69
70	94·86	4	98 27 37·2	−19·141	+0·139	−0·279	164	2220	95		290	472	−8 216	70
71	97·94	3	83 32 1·1	−19·137	+0·144	+0·021	162	2216	97			474	+6 181	71
72	98·89	3	89 36 58·9	−19·112	+0·144			2258	111		295		+0 210	72
73	98·91	3	88 30 45·4	−19·070	+0·147				138	348			+1 241	73
74	97·96	3	86 54 43·7	−19·053	+0·149	+0·019	171	2329		354		484	+2 185	74
75	98·98	3	87 14 9·6	−19·010	+0·152	+0·028			176	362			+2 190	75
76	95·80	3	84 21 49·7	−19·001	+0·153			2393	180				+5 168	76
77	97·99	3	78 59 14·9	−18·959	+0·158			2435	209			501	+10 168	77
78	98·90	3	88 47 45·1	−18·918	+0·157	+0·046		2479	233	372			+0 223	78
79	98·98	3	85 47 4·1	−18·915	+0·158	−0·002		2485	235	373		506	+3 190	79
80	00·91	3	85 0 43·4	−18·897	+0·160								+4 235	80
81	98·71	3	84 23 24·4	−18·892	+0·161								+5 175	81
82	02·25	3	98 41 57·3	−18·872	+0·156	+0·196	184	2541	268		325	513	−8 244	82
83	02·60	3	85 3 56·4	−18·844	+0·163			2579		392			+4 248	83
84	02·90	3	87 32 53·3	−18·827	+0·163			2589	295	394			+2 207	84
85	95·85	3	84 52 31·3	−18·809	+0·166				309	396			+4 249	85
86	98·91	3	86 59 0·6	−18·791	+0·166			2632	322	397			+2 211	86
87	98·72	13	1 13 48·2	−18·781	+1·280						319	510	+88 7	87
88	98·96	3	85 9 45·4	−18·768	+0·168	+0·141	194		337	404			+4 251	88
89	98·23	81	1 13 33·3	−18·765	+1·299	+0·002	102				324	512	+88 8	89
90	97·95	3	82 33 24·7	−18·747	+0·170			2677	347			534	+7 213	90

48, 62, 75, 78, 79. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 50. The Proper Motions adopted are those of Auwers' Bradley, but other values in R.A. are Auwers (Astronomische Nachrichten, 3928) +0^s·0124, and Newcomb (Fundamental Catalogue) +0^s·0132. 52. Authority for Proper Motions: Auwers (Astronomische Nachrichten, 3511).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
91	Persei	9·3	1	96·83	2	1 23 49·64	+3·6794	+0·0553		91
92	Ceti	8·0	1	02·91	3	1 24 45·48	+3·0715	+0·0062		92
93	98 Piscium μ	5·0	...	97·96	3	1 24 56·63	+3·1204	+0·0091	+0·0177	93
94	Piscium R	Var.	...	02·84	3	1 25 28·62	+3·0929	+0·0075		94
95	99 Piscium η	3·8	...	01·43	4	1 26 7·80	+3·2026	+0·0143	−0·0002	95
96	Trianguli	9·1	1	95·40	4	1 27 31·72	+3·4052	+0·0287		96
97	102 Piscium π	5·6	...	97·93	3	1 31 47·78	+3·1800	+0·0126	−0·0064	97
98	Piscium	7·8*	...	98·90	3	1 33 10·14	+3·0919	+0·0076		98
99	105 Piscium	6·1	...	97·97	3	1 34 16·95	+3·2250	+0·0152	+0·0032	99
100	Ceti	7·8*	...	02·26	3	1 34 17·56	+3·0737	+0·0067		100
101	106 Piscium ν	4·6	...	98·06	12	1 36 13·52	+3·1202	+0·0092	−0·0034	101
102	Piscium	6·9	1	98·58	3	1 39 25·76	+3·0994	+0·0082		102
103	Piscium	7·7*	...	98·97	3	1 39 55·12	+3·0924	+0·0078		103
104	110 Piscium ο	4·5	...	98·82	17	1 40 6·66	+3·1588	+0·0112	+0·0029	104
105	Piscium	6·8	...	99·01	3	1 40 33·15	+3·1041	+0·0084		105
106	Piscium	6·9	...	99·03	3	1 40 44·50	+3·1017	+0·0083		106
107	3 Arietis	6·4	...	97·94	3	1 41 9·45	+3·2463	+0·0160	+0·0019	107
108	4 Arietis	5·7	1	97·97	3	1 42 45·36	+3·2439	+0·0157	+0·0015	108
109	Piscium	6·4	1	98·93	3	1 43 15·08	+3·1051	+0·0085		109
110	Ceti	7·7	1	02·28	3	1 43 51·70	+3·0812	+0·0074		110
111	Cassiopeiae	9·0	1	97·92	3	1 45 5·32	+4·4169	+0·1205		111
112	54 Ceti	6·0	...	97·96	3	1 45 33·55	+3·1834	+0·0124	−0·0062	112
113	55 Ceti ζ	4·0	...	98·34	3	1 46 31·34	+2·9581	+0·0024	+0·0003	113
114	111 Piscium ξ	4·9	...	98·59	3	1 48 22·59	+3·1014	+0·0084	+0·0004	114
115	6 Arietis β	2·7	...	99·75	14	1 49 6·79	+3·2996	+0·0184	+0·0050	115
116	Piscium	6·2	...	98·95	3	1 50 43·55	+3·0874	+0·0079	+0·0090	116
117	8 Arietis ι	5·1	...	97·98	4	1 51 53·13	+3·2684	+0·0165	+0·0011	117
118	Persei	9·2*	...	02·86	3	1 53 45·35	+3·8395	+0·0544		118
119	Arietis	6·0	...	97·98	3	1 54 4·54	+3·2062	+0·0133	−0·0013	119
120	Ceti	8·0	1	95·55	3	1 54 19·94	+2·7959	−0·0018		120
121	Ceti	7·7	1	95·55	3	1 54 20·47	+2·7959	−0·0018		121
122	112 Piscium	5·8	...	98·59	3	1 54 56·87	+3·1021	+0·0086	+0·0141	122
123	Piscium	7·1	...	01·99	3	1 55 9·65	+3·1167	+0·0092		123
124	113 Piscium α^2	6·5	1	99·07	3	1 56 52·09	+3·0987	+0·0085	+0·0016	124
125	113 Piscium α	5·3	2	98·48	4	1 56 52·25	+3·0987	+0·0085	+0·0016	125
126	Arietis	6·3	...	97·92	3	1 57 12·04	+3·2237	+0·0140		126
127	Piscium	7·6	1	98·95	3	1 57 49·18	+3·1057	+0·0088	+0·0090	127
128	13 Arietis α	2·3	...	00·68	10	2 1 31·98	+3·3596	+0·0204	+0·0127	128
129	Ceti	8·0*	...	01·97	3	2 1 39·38	+3·0841	+0·0080		129
130	Ceti	7·8	2	99·04	3	2 2 25·04	+3·1341	+0·0100		130
131	Ceti	7·5	...	97·93	3	2 4 27·36	+3·1181	+0·0094		131
132	Ceti	6·9	...	98·96	3	2 4 39·51	+3·1126	+0·0092		132
133	15 Arietis	5·9	...	97·94	3	2 5 4·88	+3·3120	+0·0177	+0·0051	133
134	64 Ceti	5·8	...	97·96	3	2 6 4·24	+3·1722	+0·0115	−0·0105	134
135	Cassiopeiae	9·0	1	98·31	3	2 6 14·87	+4·5000	+0·1072		135

94. The magnitude varies from 7 to below 13; the period is 344 days. 101. Reddish-orange. 102. Reddish. 104. W.B. magnitude, 9. 113. Reddish-yellow. 124. Slight orange tint.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
91	96.83	2	38 14 20.1	−18.726	+0.200								+51 316	91
92	02.91	3	90 8 33.0	−18.697	+0.170				375				−0 240	92
93	97.96	3	84 22 17.6	−18.690	+0.173	+0.031	199	2735	379		352	544	+5 194	93
94	02.84	3	87 38 2.8	−18.674	+0.172					413			+2 222	94
95	03.08	7	75 10 10.5	−18.653	+0.179	+0.003	203	2763			356	548	+14 231	95
96	95.40	4	56 16 54.7	−18.607	+0.193								+33 253	96
97	97.93	3	78 22 11.8	−18.465	+0.189	−0.054	214	2951	501		378	574	+11 205	97
98	98.90	3	87 55 22.0	−18.418	+0.186			3012		457			+1 293	98
99	97.97	3	74 6 4.5	−18.379	+0.196	+0.008	223	3041			391	584	+15 245	99
100	02.26	3	89 53 45.7	−18.379	+0.187			3045	556				−0 257	100
101	97.63	3	85 1 5.3	−18.310	+0.193	−0.005	228	3111	609	474	396	589	+4 293	101
102	98.58	3	87 16 43.1	−18.194	+0.198				679	495			+2 259	102
103	98.97	3	87 59 55.3	−18.176	+0.198			3206	686	498			+1 313	103
104	97.35	5	81 20 43.3	−18.169	+0.203	−0.058	232	3212	688		407	606	+8 273	104
105	99.01	3	86 50 2.2	−18.153	+0.200			3226		499			+2 266	105
106	99.03	3	87 5 0.2	−18.146	+0.200			3230		501			+2 268	106
107	97.94	3	73 5 16.3	−18.131	+0.210	−0.002	234	3238					+16 196	107
108	97.97	3	73 32 32.3	−18.070	+0.213	+0.016	235	3278				613	+16 203	108
109	98.93	3	86 48 49.5	−18.051	+0.205			3298	735	512		615	+2 270	109
110	02.28	3	89 9 57.9	−18.028	+0.204				745				+0 294	110
111	97.92	3	23 45 30.7	−17.981	+0.293								+66 167	111
112	97.96	3	79 27 6.1	−17.962	+0.214	+0.031	243	3380	767		425	623	+10 252	112
113	98.34	3	100 49 45.1	−17.925	+0.201	+0.028	247	3416	794		428	626	−11 359	113
114	98.59	3	87 18 21.7	−17.852	+0.214	−0.020	251	3478	827	534		636	+2 290	114
115	02.77	12	69 40 50.5	−17.822	+0.228	+0.102	252	3494			435	640	+20 306	115
116	98.95	3	88 38 44.8	−17.757	+0.217	−0.180		3563	865	547			+1 347	116
117	97.99	3	72 40 13.4	−17.710	+0.231	+0.019	262	3594				659	+17 289	117
118	02.86	3	39 41 57.8	−17.633	+0.274								+50 418	118
119	97.98	3	78 11 23.6	−17.619	+0.231	+0.025		3663	912		449	669	+11 261	119
120	95.55	3	113 24 20.7	−17.608	+0.203			3684			451			120
121	95.55	3	113 24 25.3	−17.608	+0.203			3684			452			121
122	98.59	3	87 22 51.6	−17.582	+0.225	+0.250	271	3688	933	560		675	+2 311	122
123	01.99	3	86 5 43.5	−17.573	+0.227			3696	940	561			+3 273	123
124	99.07	3	87 43 7.0	−17.501	+0.228	+0.009	277	3768		571		684	+2 317	124
125	98.48	4	87 43 9.8	−17.501	+0.228	+0.009	277	3768		572		685	+2 317	125
126	97.92	3	77 0 20.3	−17.487	+0.238				973			688	+12 271	126
127	98.95	3	87 7 38.4	−17.460	+0.230	−0.140			987	577			+2 321	127
128	03.27	12	67 0 37.2	−17.298	+0.255	+0.134	287	3870			478	705	+22 306	128
129	01.97	3	89 2 6.4	−17.293	+0.235								+0 352	129
130	99.04	3	84 50 57.3	−17.259	+0.240			3914	1072	597			+4 354	130
131	97.93	3	86 14 27.1	−17.168	+0.242			3978	7	602			+3 288	131
132	98.96	3	86 42 13.3	−17.158	+0.242			3985	13	604			+3 289	132
133	97.94	3	70 58 16.8	−17.139	+0.258	+0.031	296	3988			498	722	+18 277	133
134	97.96	3	81 53 54.2	−17.094	+0.249	+0.100	302	4035	32			726	+7 347	134
135	98.31	3	26 6 57.7	−17.086	+0.351							725	+63 305	135

116. Authority for Proper Motions: Porter. 119. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis).
127. The Proper Motions have been specially computed for the present catalogue.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Process.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
136	Ceti	6.7	...	99.05	3	2 6 31.91	+3.1092	+0.0090		136
137	Ceti	6.7	...	98.95	3	2 7 5.12	+3.1007	+0.0087		137
138	19 Arietis	6.3	1	97.63	3	2 7 35.88	+3.2595	+0.0152	+0.0049	138
139	65 Ceti ... ... ξ^1	4.6	...	01.70	9	2 7 41.86	+3.1768	+0.0117	−0.0032	139
140	Ceti	7.4	1	99.07	3	2 8 15.91	+3.1291	+0.0098	+0.0011	140
141	Ceti	7.8	1	99.08	3	2 9 27.86	+3.0879	+0.0083		141
142	Ceti	6.7	...	99.03	3	2 10 1.54	+3.0759	+0.0079		142
143	Ceti	8.0*	...	01.98	3	2 11 13.28	+3.1254	+0.0097		143
144	67 Ceti	5.7	...	00.93	7	2 11 59.68	+2.9848	+0.0050	+0.0036	144
145	22 Arietis ... ... θ	5.6	...	97.97	3	2 12 33.66	+3.3306	+0.0181	−0.0023	145
146	Ceti	5.8	...	97.93	3	2 12 49.61	+3.0892	+0.0084	+0.0220	146
147	Ceti	7.8*	...	02.85	3	2 14 17.73	+3.1032	+0.0089		147
148	69 Ceti	5.5	...	01.95	3	2 16 49.08	+3.0719	+0.0079	−0.0015	148
149	Ceti	8.3*	...	02.02	3	2 17 47.72	+3.1169	+0.0094		149
150	24 Arietis ... ... ξ	5.5	1	97.67	4	2 19 27.30	+3.2096	+0.0127	−0.0007	150
151	Ceti	6.5	...	98.32	3	2 22 50.21	+3.0933	+0.0087		151
152	73 Ceti ... ... ξ^2	4.3	...	99.19	11	2 22 50.43	+3.1825	+0.0117	+0.0011	152
153	Ceti	6.3	...	97.98	3	2 24 14.88	+3.1990	+0.0122		153
154	Ceti	8.2*	...	01.97	3	2 24 54.27	+3.1302	+0.0099		154
155	26 Arietis	6.2	...	98.33	3	2 25 1.80	+3.3513	+0.0180	+0.0043	155
156	27 Arietis	6.4	...	98.33	3	2 25 21.44	+3.3189	+0.0167	+0.0014	156
157	Ceti	5.4	...	98.95	3	2 26 19.65	+3.0981	+0.0089		157
158	Ceti	7.7†	...	99.04	3	2 26 20.83	+3.0817	+0.0084		158
159	Ceti	7.2†	...	99.04	3	2 26 21.40	+3.0818	+0.0084		159
160	29 Arietis	6.1	...	97.96	3	2 27 25.33	+3.2815	+0.0151	−0.0028	160
161	Ceti	7.5	...	99.01	3	2 27 33.74	+3.0810	+0.0084		161
162	Ceti	8.0*	...	02.04	3	2 29 56.24	+3.1252	+0.0097		162
163	78 Ceti ... ... ν	5.1	...	98.46	8	2 30 37.45	+3.1465	+0.0104	−0.0051	163
164	31 Arietis	5.7	...	97.93	3	2 31 10.57	+3.2471	+0.0137	+0.0177	164
165	32 Arietis ... ... ν	5.3	...	98.29	3	2 33 8.17	+3.3994	+0.0193	−0.0019	165
166	Ceti	6.7	1	98.99	3	2 33 24.46	+3.1164	+0.0095		166
167	82 Ceti ... ... δ	3.9	...	00.63	9	2 34 21.34	+3.0712	+0.0082	+0.0004	167
168	Ceti	7.8*	...	99.07	3	2 35 42.25	+3.1380	+0.0101		168
169	Ceti	7.1	1	99.07	3	2 36 7.86	+3.1316	+0.0099		169
170	Ceti	6.7	...	02.61	3	2 36 22.43	+3.0745	+0.0083		170
171	34 Arietis ... ... μ	5.7	...	98.63	3	2 36 43.52	+3.3732	+0.0180	+0.0009	171
172	85 Ceti	6.3	...	98.66	3	2 37 5.71	+3.2268	+0.0128	−0.0041	172
173	86 Ceti ... ... γ^2	3.6	...	99.46	4	2 38 7.05	+3.1145	+0.0094	−0.0114	173
174	36 Arietis	6.5	...	98.63	3	2 38 44.13	+3.3393	+0.0166	+0.0024	174
175	37 Arietis ... ... o	5.8	...	98.63	3	2 39 2.16	+3.3000	+0.0152	−0.0013	175
176	38 Arietis	5.2	...	98.70	3	2 39 30.54	+3.2553	+0.0137	+0.0073	176
177	87 Ceti ... ... μ	4.3	...	98.67	3	2 39 32.09	+3.2191	+0.0125	+0.0164	177
178	Ceti	6.7	2	99.07	3	2 40 6.21	+3.1372	+0.0101		178
179	Arietis	7.3	...	98.64	3	2 41 31.40	+3.4322	+0.0198		179
180	40 Arietis	6.0	...	98.41	4	2 42 55.56	+3.3539	+0.0169	+0.0018	180

139. W.B. magnitude, 9. 158, 159. The second star is brighter than the first by 0.6 magnitude.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
136	99·05	3	87 1 5·0	−17·073	+0·245			4053		612			+ 2 346	136
137	98·95	3	87 43 30·3	−17·047	+0·245			4077	58	616			+ 2 347	137
138	97·63	3	75 11 19·3	−17·024	+0·258	+0·016	305	4091	62		511	738	+14 357	138
139	01·95	3	81 37 19·7	−17·019	+0·252	+0·001	306	4074	65		513	739	+ 8 345	139
140	99·07	3	85 27 15·7	−16·993	+0·250	+0·066		4113	76	623			+ 4 367	140
141	99·08	3	88 47 21·3	−16·937	+0·248			4152	97	628			+ 0 369	141
142	99·03	3	89 44 44·1	−16·910	+0·248			4174	106		522		+ 0 370	142
143	02·26	4	85 50 16·7	−16·854	+0·254			4212	123	637			+ 3 313	143
144	00·61	3	96 52 58·2	−16·817	+0·244	+0·109	321	4250	140		530	767	− 7 393	144
145	97·97	3	70 33 40·8	−16·790	+0·273	−0·010	320	4243			532	770	+19 340	145
146	97·93	3	88 42 54·1	−16·778	+0·254	−0·350		4268	147	648			+ 1 410	146
147	02·85	3	87 38 25·2	−16·707	+0·258			4318	177	655			+ 2 360	147
148	01·95	3	90 3 39·4	−16·584	+0·259	+0·015	333		221		548		− 0 355	148
149	02·02	3	86 39 24·2	−16·536	+0·264					666			+ 3 327	149
150	97·59	3	79 50 31·8	−16·453	+0·275	+0·013	338	4449	268			800	+ 9 316	150
151	98·32	3	88 29 14·6	−16·282	+0·270			4565	334	682			+ 1 431	151
152	00·99	3	81 59 16·6	−16·282	+0·278	+0·001	347	4557	329		574	819	+ 7 388	152
153	97·98	3	80 52 50·6	−16·210	+0·282			4602	358			830	+ 8 385	153
154	01·97	3	85 50 23·8	−16·176	+0·277					696			+ 3 346	154
155	98·33	3	70 35 18·5	−16·169	+0·296	+0·025	349	4623				833	+19 365	155
156	98·33	3	72 44 17·9	−16·153	+0·294	+0·086	351	4636				834	+17 380	156
157	98·95	3	88 10 33·4	−16·102	+0·276			4681	399	705			+ 1 438	157
158	99·04	3	89 21 4·9	−16·101	+0·275			4684	400				+ 0 415	158
159	99·04	3	89 20 53·9	−16·100	+0·275			4686	401				+ 0 415	159
160	97·96	3	75 24 28·9	−16·045	+0·294	−0·036	352	4707	412			844	+14 419	160
161	99·01	3	89 24 28·9	−16·037	+0·277			4725	418				+ 0 421	161
162	02·04	3	86 18 40·0	−15·912	+0·284				455	720			+ 3 359	162
163	01·95	3	84 50 34·2	−15·875	+0·287	+0·028	362		472	724	611	858	+ 4 418	163
164	97·93	3	77 59 9·0	−15·845	+0·297	+0·075	364	4828			615	862	+11 360	164
165	98·29	3	68 28 15·2	−15·740	+0·314	+0·011	367	4886				868	+21 362	165
166	98·99	3	86 59 23·5	−15·725	+0·289			4905	523	733			+ 2 406	166
167	02·37	5	90 6 9·2	−15·674	+0·286	+0·007	372	4927	547		631	871	− 0 406	167
168	99·07	3	85 33 29·6	−15·600	+0·294				573	745			+ 4 425	168
169	99·07	3	85 59 57·2	−15·576	+0·294				585	748			+ 3 373	169
170	02·61	3	89 52 53·7	−15·563	+0·289				592				− 0 410	170
171	98·63	3	70 24 52·0	−15·543	+0·318	+0·037	377	4992				879	+19 403	171
172	98·66	3	79 41 4·0	−15·523	+0·305	+0·028	381	5006	600			880	+10 360	172
173	99·94	3	87 11 7·8	−15·466	+0·296	+0·156	383	5045	616	759	647	886	+ 2 422	173
174	98·63	3	72 39 32·9	−15·432	+0·318	+0·032	384	5051				889	+17 426	174
175	98·63	3	75 6 41·3	−15·415	+0·314	+0·022	385	5061				890	+14 457	175
176	98·70	3	77 58 29·3	−15·389	+0·311	+0·069	386	5075	634		652	893	+11 377	176
177	98·67	3	80 18 28·9	−15·387	+0·308	+0·020	387	5079	636		653	894	+ 9 359	177
178	99·07	3	85 42 34·0	−15·355	+0·301			5110	652	772			+ 4 437	178
179	98·64	3	67 27 30·5	−15·275	+0·331			5134				903	+22 392	179
180	98·58	3	72 7 57·5	−15·195	+0·326	+0·021	393	5184			664	911	+17 442	180

140. Authority for Proper Motions: Boss. 146. Authority for Proper Motions: Porter.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
181	42 Arietis ... ... π	5·2	...	97·99	3	2 43 42·58	+3·3413	+0·0163	−0·0011	181
182	Ceti	7·3	2	99·01	3	2 44 29·27	+3·0805	+0·0085		182
183	43 Arietis ... ... σ	5·7	1	99·27	8	2 45 58·15	+3·3046	+0·0150	−0·0002	183
184	Ceti	7·5	1	99·00	3	2 46 9·99	+3·1000	+0·0090		184
185	Ceti	7·3	1	99·05	3	2 48 28·29	+3·0972	+0·0090	−0·0040	185
186	Ceti	8·0	1	02·02	3	2 48 57·58	+3·1457	+0·0102		186
187	Ceti	7·3	1	99·07	3	2 49 55·37	+3·1213	+0·0096		187
188	45 Arietis ... ... ρ^2	6·0	...	97·98	3	2 50 11·24	+3·3652	+0·0167	−0·0022	188
189	Ceti	7·0	3	99·04	3	2 50 21·26	+3·0982	+0·0090		189
190	46 Arietis ... ... ρ^3	5·7	...	97·95	3	2 50 47·30	+3·3607	+0·0165	+0·0186	190
191	Ceti	6·3	...	99·04	3	2 51 50·12	+3·1380	+0·0100		191
192	Ceti	7·3	2	02·92	3	2 52 2·37	+3·0734	+0·0084		192
193	Persei	9·2	1	00·21	4	2 52 5·99	+4·3873	+0·0662		193
194	47 Arietis	5·8	...	98·31	3	2 52 21·60	+3·4099	+0·0181	+0·0147	194
195	48 Arietis ... ... ε	4·6	...	00·37	5	2 53 29·46	+3·4241	+0·0184	−0·0025	195
196	Ceti	6·3	...	99·03	3	2 56 36·22	+3·1531	+0·0103		196
197	92 Ceti ... ... α	2·9	...	98·61	10	2 57 3·01	+3·1330	+0·0098	−0·0029	197
198	93 Ceti	6·5	1	99·00	3	2 57 8·16	+3·1372	+0·0099	−0·0016	198
199	Arietis	6·5	...	97·95	3	2 59 6·69	+3·3333	+0·0152	−0·0026	199
200	Ceti	6·1	...	98·98	3	2 59 27·74	+3·0970	+0·0089		200
201	Arietis	5·8	...	97·97	3	3 0 54·16	+3·2884	+0·0138		201
202	54 Arietis	6·5	...	97·98	3	3 2 40·86	+3·3910	+0·0166	−0·0005	202
203	Ceti	6·9	...	98·98	3	3 5 44·44	+3·1055	+0·0091		203
204	Arietis	6·6	...	98·28	3	3 5 52·28	+3·2906	+0·0136		204
205	57 Arietis ... ... δ	4·5	...	97·98	8	3 5 54·47	+3·4131	+0·0171	+0·0095	205
206	Ceti	8·0	1	02·90	3	3 6 19·29	+3·1465	+0·0100		206
207	Ceti	8·2*	...	02·00	3	3 8 54·08	+3·0790	+0·0085		207
208	Ceti	9·0*	...	02·34	3	3 9 7·27	+3·1108	+0·0092		208
209	58 Arietis ... ... ζ	5·0	1	99·74	5	3 9 9·04	+3·4434	+0·0177	−0·0032	209
210	Persei	9·0	2	02·95	3	3 12 55·11	+3·7866	+0·0289		210
211	96 Ceti ... ... κ^1	4·9	...	97·64	3	3 14 6·88	+3·1253	+0·0094	+0·0164	211
212	Ceti	6·8	...	99·00	3	3 14 52·16	+3·0923	+0·0087		212
213	61 Arietis ... ... τ^1	5·1	...	98·81	12	3 15 27·08	+3·4549	+0·0175	+0·0008	213
214	97 Ceti ... ... κ^2	6·7	1	99·01	3	3 15 52·84	+3·1312	+0·0095	+0·0027	214
215	63 Arietis ... ... τ^2	5·2	...	97·34	3	3 16 59·78	+3·4490	+0·0172	−0·0043	215
216	33 Persei ... ... α	1·9	...	01·78	3	3 17 10·76	+4·2595	+0·0483	+0·0015	216
217	Ceti	7·0	1	99·07	3	3 18 23·23	+3·1533	+0·0099		217
218	64 Arietis	5·9	1	98·34	3	3 18 23·99	+3·5339	+0·0195	−0·0004	218
219	Ceti	7·0	1	99·04	3	3 18 27·62	+3·0826	+0·0085		219
220	Tauri	6·2	...	98·62	3	3 18 39·86	+3·2944	+0·0130		220
221	65 Arietis	6·0	...	98·29	3	3 18 40·00	+3·4527	+0·0171	−0·0003	221
222	1 Tauri ... ... o	3·8	...	98·68	8	3 19 25·78	+3·2287	+0·0115	−0·0052	222
223	Arietis	6·5	1	96·68	3	3 21 20·59	+3·4152	+0·0159		223
224	Tauri	7·4	...	02·06	3	3 22 2·47	+3·1075	+0·0089		224
225	66 Arietis	6·1	...	98·00	3	3 22 35·66	+3·5000	+0·0181	−0·0008	225

181. A faint companion follows south. 183. Greenish-blue. 193. A star (BD + 55° 727), magnitude 8·8, precedes 2^m 3^s, and is of nearly same N.P.D. 197. Orange-red. 216. Yellow.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
181	97·99	3	72 57 5·4	−15·151	+0·326	−0·001	397	5209				918	+16 355	181
182	99·01	3	89 29 37·1	−15·106	+0·302			5246	723		673		+ 0 469	182
183	98·96	3	75 19 46·7	−15·020	+0·326	+0·039	400	5280	744		676	932	+14 480	183
184	99·00	3	88 14 21·2	−15·009	+0·306					797			+ 1 503	184
185	99·05	3	88 26 7·1	−14·874	+0·309	+0·180		5353	795	811			+ 1 509	185
186	02·02	3	85 21 32·8	−14·845	+0·315			5370	806	816			+ 4 458	186
187	99·07	3	86 55 8·7	−14·789	+0·314			5406	823	824			+ 2 450	187
188	97·98	3	72 4 24·3	−14·773	+0·338	+0·005	406	5400			694	947	+17 457	188
189	99·04	3	88 23 14·4	−14·763	+0·312			5418	835	827			+ 1 512	189
190	97·95	3	72 22 32·4	−14·738	+0·339	+0·189	408	5412				948	+17 458	190
191	99·04	3	85 54 9·8	−14·675	+0·318				864	837			+ 3 410	191
192	02·92	3	89 57 17·1	−14·663	+0·312			5464	872		702		− 0 460	192
193	97·62	3	34 45 12·3	−14·659	+0·443								+55 732	193
194	98·31	3	69 43 55·9	−14·643	+0·346	+0·004	412	5453				957	+20 480	194
195	02·31	3	69 3 33·8	−14·576	+0·349	+0·006	415	5486			707	959	+20 484	195
196	99·03	3	85 3 33·9	−14·388	+0·327			5592	957	857			+ 4 485	196
197	99·02	3	86 18 8·9	−14·360	+0·325	+0·073	428	5613	963	860	722	965	+ 3 419	197
198	99·00	3	86 2 29·7	−14·355	+0·326	−0·012	430	5617	965	861			+ 3 420	198
199	97·95	3	74 31 54·8	−14·234	+0·349	+0·099		5671	995			970	+15 430	199
200	98·98	3	88 31 35·8	−14·212	+0·325			5694	1008	871			+ 1 534	200
201	97·97	3	77 11 54·2	−14·123	+0·347			5724	1033				+12 436	201
202	97·98	3	71 35 18·4	−14·012	+0·360	+0·008	440	5773				982	+18 414	202
203	98·98	3	88 3 45·7	−13·819	+0·334			5897	38	914			+ 1 561	203
204	98·28	3	77 19 52·2	−13·811	+0·354			5893	36		748	995	+12 452	204
205	99·76	5	70 39 5·0	−13·809	+0·367	−0·005	446	5884			749	996	+19 477	205
206	02·90	3	85 39 16·1	−13·782	+0·339			5914	46	916			+ 4 507	206
207	02·00	3	89 38 1·9	−13·618	+0·335			5990	106				+ 0 542	207
208	02·34	3	87 46 40·6	−13·604	+0·339				109	930			+ 2 500	208
209	97·57	3	69 19 33·8	−13·602	+0·375	+0·070	451	5983			764	1009	+20 527	209
210	02·95	3	54 23 44·2	−13·358	+0·418								+35 665	210
211	97·64	3	86 59 46·9	−13·279	+0·347	−0·110	463	6136		957	783	1019	+ 2 518	211
212	99·00	3	88 52 45·8	−13·230	+0·345			6166	222	963			+ 0 567	212
213	00·65	3	69 12 47·6	−13·192	+0·385	+0·030	465				787	1026	+20 543	213
214	99·01	3	86 41 4·0	−13·163	+0·350	+0·037	468	6191	238	967			+ 3 461	214
215	97·34	3	69 36 55·7	−13·089	+0·387	+0·007	470	6214				1030	+20 551	215
216	03·15	3	40 29 39·7	−13·077	+0·477	+0·033	464				788	1031	+49 917	216
217	99·07	3	85 28 25·3	−12·997	+0·356			6267	274	977			+ 4 532	217
218	98·34	3	65 37 47·5	−12·996	+0·398	+0·046	472	6245				1038	+24 481	218
219	99·04	3	89 26 35·4	−12·992	+0·348			6270	277				+ 0 581	219
220	98·62	3	77 43 30·3	−12·978	+0·372			6268	275				+12 473	220
221	98·29	3	69 33 4·8	−12·978	+0·389	−0·001	474	6257			799	1040	+20 556	221
222	01·98	3	81 19 22·4	−12·927	+0·366	+0·068	477	6287	294		802	1042	+ 8 511	222
223	96·68	3	71 35 36·1	−12·799	+0·389			6341				1056	+18 484	223
224	02·06	3	88 4 5·2	−12·752	+0·355			6377	342	993			+ 1 597	224
225	98·00	3	67 32 25·6	−12·715	+0·400	+0·120	482	6374				1065	+22 495	225

185. Authority for Proper Motions: Porter.

199. Authority for Proper Motions: Auwers (Berlin A).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
226	Tauri	6·5	...	97·63	3	3 23 50·84	+3·1254	+0·0092		226
227	Persei	Var.	3	01·50	7	3 24 23·99	+4·0621	+0·0372		227
228	5 Tauri ... ... f	4·3	...	99·78	9	3 25 21·02	+3·3059	+0·0129	−0·0002	228
229	Tauri	7·7*	...	98·98	3	3 25 29·53	+3·1646	+0·0099		229
230	Tauri	7·2	...	97·32	3	3 25 40·04	+3·4042	+0·0153		230
231	18 Eridani ... ... ε	3·9	...	99·31	16	3 28 13·04	+2·8907	+0·0055	−0·0675	231
232	7 Tauri	6·0	...	97·93	3	3 28 31·09	+3·5454	+0·0187	0·0000	232
233	Tauri	6·1	...	98·95	3	3 31 39·30	+3·0773	+0·0082	−0·0014	233
234	10 Tauri	4·4	...	02·06	3	3 31 46·07	+3·0743	+0·0082	−0·0159	234
235	Tauri	6·5	...	97·33	3	3 33 11·74	+3·4754	+0·0164		235
236	Tauri	7·7	1	99·00	3	3 33 42·61	+3·1184	+0·0089		236
237	Tauri	6·3	1	97·33	3	3 33 46·28	+3·3849	+0·0142	+0·0009	237
238	12 Tauri	5·7	...	98·34	3	3 34 38·50	+3·1241	+0·0090	−0·0060	238
239	11 Tauri	6·5	1	01·71	6	3 34 47·77	+3·5752	+0·0188	−0·0002	239
240	Tauri	6·7	...	99·07	3	3 35 11·15	+3·1634	+0·0096		240
241	13 Tauri	5·6	...	98·33	3	3 36 32·76	+3·4538	+0·0156	−0·0013	241
242	Persei	8·1	1	99·11	3	3 37 45·23	+4·1879	+0·0383	+0·0310	242
243	14 Tauri	6·2	...	98·63	3	3 38 0·15	+3·4549	+0·0155	+0·0073	243
244	23 Eridani ... ... δ	3·7	...	01·03	3	3 38 27·38	+2·8785	+0·0054	−0·0081	244
245	Tauri	6·1	...	98·62	3	3 38 38·92	+3·4829	+0·0161		245
246	16 Tauri	5·4	...	98·72	3	3 38 51·38	+3·5580	+0·0179	+0·0006	246
247	17 Tauri	3·8	...	98·72	3	3 38 56·09	+3·5541	+0·0178	−0·0001	247
248	18 Tauri	5·6	...	99·11	3	3 39 11·62	+3·5711	+0·0182	−0·0011	248
249	19 Tauri	4·3	...	99·06	3	3 39 15·22	+3·5626	+0·0180	−0·0008	249
250	Tauri	6·7	...	98·38	3	3 39 50·57	+3·1168	+0·0087		250
251	20 Tauri	4·1	...	98·08	3	3 39 52·43	+3·5613	+0·0179	+0·0003	251
252	Tauri	8·0	2	02·65	3	3 40 21·25	+3·1287	+0·0089		252
253	23 Tauri	4·3	...	98·63	3	3 40 23·29	+3·5525	+0·0176	−0·0005	253
254	25 Tauri ... ... η	2·9	...	00·38	5	3 41 32·24	+3·5579	+0·0176	−0·0004	254
255	27 Tauri	3·7	...	98·33	3	3 43 12·82	+3·5592	+0·0175	−0·0003	255
256	28 Tauri	5·2	...	98·66	3	3 43 14·05	+3·5611	+0·0175	−0·0013	256
257	Eridani	6·5	1	02·05	3	3 43 31·03	+3·0712	+0·0079		257
258	Tauri	6·9	1	98·70	3	3 44 2·23	+3·5192	+0·0164		258
259	Tauri	5·3	...	98·62	3	3 44 18·07	+3·5965	+0·0182	+0·0029	259
260	Eridani	8·5	1	99·06	3	3 44 24·11	+3·0933	+0·0082	+0·0110	260
261	Eridani	7·0	1	99·11	3	3 45 31·90	+3·0972	+0·0083		261
262	Tauri	6·8	...	97·67	3	3 45 44·05	+3·5167	+0·0162		262
263	Tauri	6·0	1	97·63	3	3 47 26·75	+3·4156	+0·0138	+0·0100	263
264	Eridani	6·7	1	00·08	3	3 48 18·76	+3·1084	+0·0083		264
265	Tauri	7·8	1	02·26	4	3 49 9·84	+3·1688	+0·0092		265
266	Tauri	7·0	2	99·05	3	3 49 31·19	+3·1080	+0·0083		266
267	32 Tauri	5·8	...	97·60	3	3 50 57·38	+3·5338	+0·0160	+0·0038	267
268	Tauri	7·0	1	00·06	3	3 51 24·28	+3·1274	+0·0085		268
269	Eridani	7·5	1	99·13	3	3 53 11·34	+3·0957	+0·0080		269
270	34 Eridani ... ... γ^1	3·4	...	99·87	17	3 53 21·73	+2·7934	+0·0047	+0·0029	270

227. Anderson's Nova Persei. (For Radcliffe observations of magnitude and colour, *vide* Monthly Notices R.A.S., lxi. and later volumes.) 231. Orange. 233. Double. Faint companion precedes. 249. Green. 265. A star (Albany 1137), magnitude 9, is of nearly same R.A. and about 1′ north. 269. Reddish. 270. Orange-red.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
271	Eridani	7·7	2	99·05	3	3 54 30·79	+3·1028	+0·0081		271
272	Tauri	6·3	1	98·00	3	3 54 53·99	+3·4223	+0·0133	−0·0016	272
273	Tauri	5·8	...	98·33	3	3 55 2·93	+3·4421	+0·0137	+0·0078	273
274	Tauri	6·9	...	98·01	3	3 55 17·34	+3·4872	+0·0146	−0·0009	274
275	Tauri	7·3	1	99·10	3	3 57 14·34	+3·1444	+0·0086		275
276	Tauri	7·1	...	01·04	3	3 58 5·81	+3·1291	+0·0083		276
277	Tauri	7·4	...	01·03	3	3 58 7·67	+3·1313	+0·0084		277
278	36 Tauri	5·6	...	98·67	3	3 58 22·67	+3·5820	+0·0162	−0·0005	278
279	40 Tauri	6·0	1	00·09	3	3 58 26·51	+3·1768	+0·0090	−0·0033	279
280	37 Tauri ... ... A^1	4·5	...	99·19	14	3 58 46·84	+3·5345	+0·0152	+0·0053	280
281	Tauri	6·8	...	98·63	3	3 58 56·10	+3·4310	+0·0132		281
282	Tauri	5·4	...	98·43	3	3 58 56·13	+3·1243	+0·0082	+0·0110	282
283	39 Tauri ... ... A^2	6·1	...	98·70	3	3 59 24·87	+3·5337	+0·0151	+0·0122	283
284	41 Tauri	5·3	...	99·04	3	4 0 28·18	+3·6717	+0·0180	+0·0009	284
285	Tauri	6·5	1	98·41	3	4 2 2·23	+3·3822	+0·0120		285
286	Tauri	6·0	1	97·69	3	4 2 15·71	+3·4303	+0·0129	−0·0004	286
287	43 Tauri ... ... ω^1	5·5	...	99·07	8	4 3 20·30	+3·4825	+0·0137	+0·0061	287
288	Tauri	8·2*	...	02·07	3	4 3 33·20	+3·0833	+0·0076		288
289	Tauri	6·5	...	98·40	3	4 4 29·45	+3·1353	+0·0082	−0·0059	289
290	44 Tauri ... ... *p*	5·5	...	98·72	3	4 4 44·31	+3·6495	+0·0169	−0·0034	290
291	Tauri	6·6	...	98·63	3	4 4 55·14	+3·4571	+0·0131	+0·0050	291
292	Tauri	8·2*	...	99·13	3	4 5 57·61	+3·1149	+0·0079		292
293	45 Tauri	5·7	...	99·14	3	4 6 0·81	+3·1810	+0·0087	+0·0080	293
294	Tauri	6·2	...	97·03	3	4 6 47·18	+3·4330	+0·0125	+0·0020	294
295	Tauri	6·1	...	98·62	3	4 6 55·36	+3·5521	+0·0147		295
296	38 Eridani ... ... o^1	4·5	...	99·76	9	4 6 58·97	+2·9261	+0·0058	−0·0006	296
297	Tauri	6·7	...	99·09	3	4 7 0·66	+3·0825	+0·0074		297
298	48 Tauri	6·3	1	97·31	3	4 10 5·49	+3·3938	+0·0116	+0·0074	298
299	Tauri	8·2*	...	02·05	3	4 10 11·59	+3·1507	+0·0081		299
300	40 Eridani ... ... o^2	4·5	...	98·40	3	4 10 40·08	+2·9099	+0·0056	−0·1442	300
301	Eridani	9·4	3	99·07	3	4 10 45·41	+2·9097	+0·0056	−0·1442	301
302	50 Tauri ... ... ω^2	4·8	...	98·35	3	4 11 23·92	+3·5135	+0·0135	−0·0039	302
303	Tauri	7·7*	...	99·09	3	4 12 5·08	+3·1202	+0·0077		303
304	51 Tauri	5·6	...	98·03	3	4 12 27·98	+3·5385	+0·0138	+0·0059	304
305	53 Tauri	5·3	...	98·65	3	4 13 32·31	+3·5291	+0·0135	−0·0002	305
306	56 Tauri	5·2	...	97·35	3	4 13 41·44	+3·5445	+0·0138	+0·0007	306
307	54 Tauri ... ... γ	3·9	...	99·17	9	4 14 6·05	+3·4020	+0·0114	+0·0073	307
308	52 Tauri ... ... ϕ	5·0	...	99·11	3	4 14 12·13	+3·6855	+0·0164	−0·0019	308
309	Tauri	6·0	...	99·13	3	4 14 36·40	+3·4736	+0·0125		309
310	58 Tauri	5·4	...	98·77	3	4 14 55·92	+3·3907	+0·0112	+0·0058	310
311	Tauri	6·1	...	98·66	3	4 16 29·64	+3·5245	+0·0131		311
312	59 Tauri ... ... χ	5·3	...	98·10	3	4 16 29·71	+3·6437	+0·0152	+0·0017	312
313	Tauri	6·9	...	00·09	3	4 16 34·03	+3·1180	+0·0075	0·0000	313
314	61 Tauri ... ... δ^1	3·9	...	98·66	3	4 17 9·98	+3·4481	+0·0118	+0·0066	314
315	Tauri	5·9	...	99·14	3	4 17 38·74	+3·5295	+0·0131		315

277, 311. Orange-red. 292. Orange.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
271	99·05	3	88 29 22·5	−10·439	+0·391			7397	1024	1167			+ 1 689	271
272	98·00	3	72 59 7·5	−10·410	+0·431	−0·011		7392				1229	+16 544	272
273	98·33	3	72 5 15·8	−10·399	+0·434	+0·038		7395				1230	+17 666	273
274	98·01	3	70 4 50·7	−10·381	+0·440	+0·030	547	7403				1232	+19 643	274
275	99·10	3	86 25 52·7	−10·234	+0·399				1064	1180			+ 3 552	275
276	01·82	5	87 11 59·3	−10·170	+0·398			7503	1082	1182			+ 2 640	276
277	01·82	5	87 5 21·7	−10·167	+0·398			7505	1083	1183			+ 2 641	277
278	98·67	3	66 10 8·2	−10·149	+0·455	+0·010	552	7486				1243	+23 609	278
279	00·09	3	84 50 24·3	−10·144	+0·403	+0·019	555	7519	1088	1184			+ 5 584	279
280	98·38	5	68 11 28·4	−10·118	+0·449	+0·058	554	7501			954	1248	+21 585	280
281	98·63	3	72 45 25·3	−10·107	+0·436			7524				1250	+17 676	281
282	98·43	3	87 26 41·5	−10·107	+0·398	+0·160		7540	1095	1186			+ 2 645	282
283	98·70	3	68 15 38·9	−10·070	+0·450	+0·115	556	7531				1251	+21 587	283
284	99·04	3	62 40 9·8	− 9·990	+0·469	+0·061	558	7566				1254	+27 633	284
285	98·41	3	75 6 16·7	− 9·871	+0·434							1266	+14 657	285
286	97·69	3	72 55 38·3	− 9·854	+0·440	+0·016		7649				1267	+16 560	286
287	00·33	3	70 39 18·3	− 9·772	+0·448	+0·033	562	7684			976	1270	+19 672	287
288	02·07	3	89 28 49·1	− 9·756	+0·397			7715	1196				+ 0 701	288
289	98·40	3	86 56 19·8	− 9·684	+0·405	+0·054		7742	14	1210			+ 2 655	289
290	98·72	3	63 46 47·5	− 9·665	+0·471	+0·037	563	7717				1272	+26 686	290
291	98·63	3	71 50 15·9	− 9·651	+0·446	−0·010		7738				1273	+18 594	291
292	99·13	3	87 56 29·1	− 9·571	+0·403			7800	50	1214			+ 1 713	292
293	99·14	3	84 44 14·1	− 9·567	+0·412	−0·023	566	7798	49	1215			+ 5 601	293
294	97·03	3	72 58 46·9	− 9·508	+0·445	+0·040		7813				1283	+16 569	294
295	98·62	3	67 50 36·9	− 9·497	+0·460			7811				1284	+22 649	295
296	98·71	3	97 5 53·0	− 9·492	+0·380	−0·085	568	7842	76		992	1285	− 7 764	296
297	99·09	3	89 31 21·8	− 9·490	+0·400				72				+ 0 710	297
298	97·31	3	74 50 57·6	− 9·252	+0·443	+0·010	572	7926	130			1302	+15 603	298
299	02·43	5	86 14 28·8	− 9·244	+0·412			7948	142	1242			+ 3 576	299
300	98·40	3	97 48 30·6	− 9·207	+0·381	+3·442	578	7988	164		1011	1308	− 7 780	300
301	99·07	3	97 48 52·0	− 9·200	+0·381	+3·442			166		1012		− 7 781	301
302	98·35	3	69 40 2·2	− 9·150	+0·460	+0·038	575	7971			1014	1311	+20 724	302
303	99·09	3	87 43 1·5	− 9·097	+0·409			8020	180	1256			+ 2 673	303
304	98·03	3	68 39 54·1	− 9·067	+0·464	+0·029	576	8010				1314	+21 618	304
305	98·65	3	69 5 57·9	− 8·983	+0·464	+0·038	580	8049				1321	+20 733	305
306	97·35	3	68 28 4·5	− 8·971	+0·466	+0·033	581	8052				1322	+21 623	306
307	97·74	3	74 36 48·9	− 8·939	+0·448	+0·030	583	8077			1025	1325	+15 612	307
308	99·11	3	62 53 17·8	− 8·931	+0·485	+0·066	582	8065				1327	+27 655	308
309	99·13	3	71 29 49·3	− 8·900	+0·458								+18 624	309
310	98·77	3	75 8 39·2	− 8·874	+0·447	+0·013	586	8105				1331	+14 682	310
311	98·66	3	69 24 53·8	− 8·751	+0·466			8146					+20 744	311
312	98·10	3	64 36 23·5	− 8·751	+0·482	+0·028	588					1338	+25 707	312
313	00·09	3	87 50 35·1	− 8·746	+0·413	+0·150		8176	281	1283			+ 2 692	313
314	98·66	3	72 41 30·5	− 8·698	+0·457	+0·025	594	8178			1044	1347	+17 712	314
315	99·14	3	69 15 3·3	− 8·661	+0·468			8195				1350	+20 751	315

272, 273, 286, 291, 294. Authority for Proper Motions: Auwers (Berlin A). 282, 313. Authority for Proper Motions: Porter.
289. Authority for Proper Motions: Boss. 301. Authority for Proper Motions: Radcliffe, 1890, 1012.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
316	63 Tauri	5·7	...	99·04	3	4 17 40·74	+3·4309	+0·0115	+0·0057	316
317	62 Tauri	6·2	...	98·74	3	4 17 57·91	+3·6116	+0·0145	−0·0002	317
318	64 Tauri ... ... δ^2	4·9	...	98·09	3	4 18 19·72	+3·4467	+0·0117	+0·0072	318
319	Tauri	6·0	...	97·95	3	4 19 7·36	+3·4848	+0·0122	+0·0097	319
320	65 Tauri ... ... κ^1	4·0	1	98·37	3	4 19 24·46	+3·5632	+0·0135	+0·0040	320
321	67 Tauri ... ... κ^2	5·4	...	98·74	3	4 19 27·44	+3·5610	+0·0134	+0·0086	321
322	68 Tauri ... ... δ^3	4·0	1	98·08	3	4 19 42·15	+3·4591	+0·0118	+0·0065	322
323	69 Tauri ... ... υ^1	4·2	...	99·11	3	4 20 19·35	+3·5770	+0·0136	+0·0068	323
324	71 Tauri	4·6	...	98·80	3	4 20 38·86	+3·4067	+0·0109	+0·0067	324
325	Tauri	6·5	...	02·07	3	4 20 44·76	+3·1607	+0·0078		325
326	Tauri	8·0	1	02·97	3	4 20 46·93	+3·0897	+0·0070		326
327	73 Tauri ... ... π	5·0	...	98·78	3	4 20 57·31	+3·3864	+0·0106	−0·0008	327
328	72 Tauri ... ... υ^2	5·4	...	99·76	3	4 21 18·52	+3·5827	+0·0136	−0·0010	328
329	Tauri	6·4	...	02·12	3	4 21 48·65	+3·1121	+0·0072		329
330	Tauri	5·8	...	98·09	3	4 22 4·59	+3·5494	+0·0130	+0·0059	330
331	75 Tauri	5·2	...	99·11	3	4 22 43·33	+3·4252	+0·0110	−0·0004	331
332	74 Tauri ... ... ϵ	3·5	...	97·31	6	4 22 46·51	+3·4912	+0·0120	+0·0070	332
333	77 Tauri ... ... θ^1	4·2	...	99·13	3	4 22 51·62	+3·4162	+0·0109	+0·0048	333
334	Eridani	6·1	...	01·06	3	4 22 52·31	+3·1075	+0·0071		334
335	78 Tauri ... ... θ^2	3·6	...	99·12	3	4 22 57·09	+3·4141	+0·0108	+0·0064	335
336	Tauri	6·6	...	00·83	4	4 23 9·18	+3·6988	+0·0153		336
337	Tauri	6·6	...	99·12	3	4 23 16·51	+3·4210	+0·0109	+0·0097	337
338	44 Eridani	5·5	...	02·12	3	4 23 21·89	+3·0974	+0·0070	+0·0002	338
339	Tauri	6·3	1	96·08	3	4 24 6·18	+3·7198	+0·0156		339
340	80 Tauri	5·8	...	98·63	3	4 24 26·40	+3·4098	+0·0106	+0·0050	340
341	Tauri	4·8	...	98·73	3	4 24 50·11	+3·4230	+0·0108	+0·0073	341
342	81 Tauri	5·5	...	98·74	3	4 24 56·54	+3·4114	+0·0106	+0·0069	342
343	85 Tauri	6·5	1	98·37	3	4 26 8·91	+3·4159	+0·0106	+0·0058	343
344	Tauri	6·3	...	00·38	3	4 26 45·23	+3·1843	+0·0077	+0·0050	344
345	Tauri	7·0†	...	98·34	4	4 27 45·36	+3·4678	+0·0111	+0·0028	345
346	Tauri	7·0†	...	99·09	3	4 27 45·66	+3·4678	+0·0111	+0·0028	346
347	Tauri	5·8	...	98·41	3	4 28 22·42	+3·7484	+0·0155		347
348	Tauri	8·0*	...	02·09	3	4 28 59·71	+3·1490	+0·0073		348
349	Eridani	7·5	...	99·15	3	4 29 18·83	+3·0770	+0·0066		349
350	Tauri	6·4	...	97·36	3	4 29 50·74	+3·5142	+0·0116	−0·0020	350
351	87 Tauri ... ... α	1·1	...	98·77	11	4 30 10·85	+3·4342	+0·0105	+0·0035	351
352	Tauri	6·0	...	98·64	3	4 30 27·67	+3·6009	+0·0128	+0·0132	352
353	49 Eridani	5·3	...	99·14	3	4 32 4·43	+3·0899	+0·0066	−0·0020	353
354	Tauri	6·0	1	97·73	3	4 32 21·77	+3·5360	+0·0116		354
355	89 Tauri	5·8	...	98·69	3	4 32 25·89	+3·4245	+0·0101	+0·0054	355
356	91 Tauri ... ... σ^1	5·2	...	98·73	3	4 33 26·47	+3·4197	+0·0100	+0·0009	356
357	92 Tauri ... ... σ^2	5·0	1	98·33	3	4 33 33·19	+3·4225	+0·0100	+0·0050	357
358	Tauri	6·7	1	96·08	3	4 35 4·04	+3·7471	+0·0144		358
359	Orionis	8·0*	...	02·00	3	4 35 45·06	+3·1231	+0·0067		359
360	Tauri	8·2	1	99·13	3	4 36 12·07	+3·5962	+0·0120		360

317. A star of 8·5 magnitude (B.D. + 23° 683) precedes 2ˢ and is north. 345. 1896 Feb. 3, Slightly brighter than second star, No. 346; 1899 Jan. 24, Bluish, slightly fainter than second star, No. 346; 1899 Feb. 3, Equal to No. 346 in magnitude. 346. Pale orange. 351. Orange-red. 358. Harvard magnitude, 5·7; B.D. 5·0.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
316	99·04	3	73 27 21·4	−8·658	+0·455	+0·032	596	8209				1351	+16 586	316
317	98·74	3	65 55 54·6	−8·636	+0·479	+0·020	595	8206				1354	+23 684	317
318	98·09	3	72 47 15·2	−8·607	+0·458	+0·020	597	8237				1356	+17 714	318
319	97·95	3	71 11 15·6	−8·544	+0·463	0·000	3231					1360	+18 633	319
320	98·37	3	67 56 5·6	−8·521	+0·474	+0·054	599	8278					+21 642	320
321	98·74	3	68 1 43·0	−8·517	+0·474	+0·051	600	8280					+21 643	321
322	98·08	3	72 18 2·2	−8·498	+0·461	+0·025	601	8297				1363	+17 719	322
323	99·11	3	67 24 47·0	−8·449	+0·477	+0·034	604	8302			1052	1367	+22 696	323
324	98·80	3	74 36 30·7	−8·423	+0·455	+0·014	605	8317	366			1369	+15 625	324
325	02·07	3	85 51 13·9	−8·415	+0·422			8340	377	1301			+4 691	325
326	02·97	3	89 11 45·2	−8·412	+0·413			8348	381				+0 753	326
327	98·73	3	75 30 43·8	−8·399	+0·452	+0·023	608	8330	375			1370	+14 697	327
328	99·76	3	67 13 44·3	−8·371	+0·478	+0·003	606	8331					+22 699	328
329	02·12	3	88 8 41·0	−8·331	+0·416			8377	400	1308			+1 753	329
330	98·09	3	68 36 10·7	−8·310	+0·475	+0·044		8358					+21 647	330
331	99·11	3	73 51 49·5	−8·258	+0·459	−0·025	610	8397				1374	+16 605	331
332	98·07	3	71 2 29·0	−8·254	+0·468	+0·028	609	8388			1061	1375	+18 640	332
333	99·13	3	74 15 34·7	−8·247	+0·458	+0·015	612	8402				1376	+15 631	333
334	01·06	3	88 21 52·2	−8·246	+0·417			8414		1311			+1 755	334
335	99·12	3	74 21 3·0	−8·240	+0·458	+0·003	613	8404				1377	+15 632	335
336	00·06	3	62 48 59·5	−8·224	+0·496			8396				1378	+27 661	336
337	00·14	3	74 3 42·9	−8·214	+0·459	+0·024		8411				1379	+15 633	337
338	02·12	3	88 50 26·2	−8·207	+0·416	+0·031	615	8427	435	1314			+1 757	338
339	96·08	3	62 5 19·3	−8·148	+0·499			8418				1381	+27 662	339
340	98·63	3	74 34 49·1	−8·121	+0·458	+0·004	617	8449	449				+15 636	340
341	98·73	3	74 1 24·0	−8·089	+0·460	+0·020	619	8466				1384	+15 637	341
342	98·74	3	74 31 31·3	−8·081	+0·459	+0·018	620	8470					+15 639	342
343	98·37	3	74 21 45·8	−7·984	+0·460	+0·026	623	8517				1392	+15 645	343
344	00·38	3	84 48 15·5	−7·935	+0·430	−0·030		8548	506	1328			+5 674	344
345	98·34	4	72 11 38·9	−7·855	+0·469	+0·026		8561				1400	+17 750	345
346	99·09	3	72 11 39·3	−7·855	+0·469	+0·026		8561				1401	+17 750	346
347	98·41	3	61 14 52·0	−7·805	+0·507			8568				1404	+28 666	347
348	02·09	3	86 27 33·5	−7·755	+0·427				564	1335			+3 619	348
349	99·15	3	89 47 56·5	−7·729	+0·417			8633	572				+0 789	349
350	97·36	3	70 19 28·3	−7·686	+0·477	+0·011		8627				1413	+19 742	350
351	98·14	3	73 41 29·7	−7·659	+0·466	+0·184	630	8639			1092	1416	+16 629	351
352	98·64	3	66 51 46·5	−7·636	+0·489	−0·013		8643				1418	+23 715	352
353	99·14	3	89 12 15·9	−7·506	+0·421	+0·010	640	8715	639				+0 798	353
354	97·73	3	69 30 57·3	−7·482	+0·482			8705					+20 785	354
355	98·69	3	74 10 0·9	−7·477	+0·467	+0·011	638	8710					+15 661	355
356	98·73	3	74 23 49·1	−7·395	+0·467	+0·066	641	8744				1434	+15 665	356
357	98·33	3	74 16 48·2	−7·386	+0·467	+0·022	643	8748				1435	+15 666	357
358	96·08	3	61 34 43·0	−7·262	+0·513			8770				1443	+28 680	358
359	02·00	3	87 41 17·6	−7·206	+0·428				727	1364			+2 747	359
360	99·13	3	67 14 58·0	−7·170	+0·493			8812				1448	+22 737	360

330. Authority for Proper Motions: Becker.
344. Authority for Proper Motions: Boss.
352. Authority for Proper Motions: Bossert.
337, 345, 346. Authority for Proper Motions: Auwers (Berlin A).
350. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis).

No.	Constellation.		Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
							h. m. s.	s.	s.	s.	
361	94 Tauri	τ	4·3	...	98·84	19	4 36 14·46	+3·5966	+0·0120	−0·0010	361
362	Orionis	...	7·2	1	99·13	3	4 39 34·05	+3·0811	+0·0062	−0·0090	362
363	Tauri	...	6·1	...	96·07	3	4 40 26·34	+3·4946	+0·0102	+0·0048	363
364	57 Eridani	μ	4·2	2	99·07	25	4 40 30·07	+2·9972	+0·0055	−0·0002	364
365	Orionis	...	8·2*	...	02·08	3	4 40 39·60	+3·1646	+0·0068		365
366	Orionis	...	7·1	1	99·07	3	4 43 14·47	+3·1286	+0·0064	−0·0020	366
367	Orionis	...	6·2	...	98·98	3	4 43 29·54	+3·1481	+0·0065		367
368	96 Tauri	...	6·3	...	96·07	3	4 44 0·78	+3·4287	+0·0091	−0·0001	368
369	97 Tauri	i	5·1	...	96·09	3	4 45 31·37	+3·5008	+0·0098	+0·0047	369
370	Orionis	...	6·7	...	99·13	3	4 45 35·61	+3·0943	+0·0060		370
371	Orionis	...	9·7	2	97·80	3	4 46 35·87	+3·0652	+0·0057		371
372	Tauri	...	6·7	1	96·73	3	4 47 31·97	+3·6160	+0·0109		372
373	5 Orionis	...	5·5	...	99·08	3	4 48 9·75	+3·1247	+0·0061	0·0000	373
374	Orionis	...	6·5	...	99·15	3	4 48 45·10	+3·1040	+0·0059		374
375	8 Orionis	π^5	3·9	...	00·11	3	4 49 2·48	+3·1234	+0·0060	−0·0004	375
376	Orionis	...	5·9	...	02·06	3	4 49 42·51	+3·0795	+0·0057		376
377	Tauri	...	6·3	...	96·08	3	4 50 9·97	+3·6521	+0·0110		377
378	3 Aurigae	ι	3·0	...	01·08	3	4 50 28·72	+3·9015	+0·0142	+0·0006	378
379	Orionis	...	6·8	1	99·15	3	4 50 37·39	+3·1735	+0·0063	+0·0120	379
380	Orionis	...	7·4	1	00·02	3	4 50 39·21	+3·1897	+0·0064		380
381	Orionis	...	6·9	...	99·15	3	4 50 50·19	+3·1053	+0·0058		381
382	Tauri	...	6·0	1	97·38	3	4 51 35·71	+3·4633	+0·0088	−0·0006	382
383	99 Tauri	...	6·0	1	98·02	3	4 51 44·51	+3·6361	+0·0106	−0·0013	383
384	98 Tauri	k	5·7	1	97·44	3	4 52 2·04	+3·6661	+0·0109	+0·0011	384
385	10 Orionis	π^6	4·7	...	99·05	3	4 53 21·86	+3·1076	+0·0057	−0·0014	385
386	Orionis	...	9·6	1	97·80	3	4 53 29·80	+3·0701	+0·0054		386
387	Orionis	...	7·0†	...	99·10	3	4 55 17·14	+3·1505	+0·0059		387
388	Orionis	...	6·3†	...	99·10	3	4 55 18·60	+3·1505	+0·0059		388
389	Orionis	...	7·1	...	99·14	3	4 55 29·21	+3·1720	+0·0060		389
390	Orionis	...	6·2	...	99·09	3	4 56 41·47	+3·0857	+0·0054		390
391	Orionis	...	7·0	1	99·11	3	4 56 49·23	+3·1056	+0·0055		391
392	102 Tauri	ι	4·7	...	96·08	3	4 57 7·01	+3·5782	+0·0093	+0·0040	392
393	Tauri	...	6·3	...	96·08	3	4 59 38·37	+3·5341	+0·0086	−0·0007	393
394	Tauri	...	6·3	1	98·03	3	4 59 41·86	+3·7104	+0·0103		394
395	Orionis	W	Var.	...	99·09	3	5 0 13·76	+3·0961	+0·0053		395
396	2 Leporis	ε	3·4	...	00·69	13	5 1 13·64	+2·5370	+0·0033	+0·0004	396
397	104 Tauri	m	5·3	1	97·48	3	5 1 32·25	+3·5058	+0·0081	+0·0375	397
398	106 Tauri	l	5·2	...	98·71	3	5 1 53·22	+3·5510	+0·0085	−0·0034	398
399	105 Tauri	...	6·0	...	97·77	3	5 1 56·60	+3·5844	+0·0088	−0·0018	399
400	103 Tauri	...	5·7	1	98·77	3	5 2 0·96	+3·6526	+0·0094	−0·0009	400
401	107 Tauri	...	6·5	...	97·76	3	5 2 56·24	+3·5374	+0·0083	−0·0010	401
402	Tauri	...	6·0	...	98·43	3	5 3 28·23	+3·7592	+0·0103		402
403	Orionis	...	7·1	3	99·12	3	5 3 41·74	+3·1427	+0·0053		403
404	Orionis	...	7·5	3	99·14	3	5 5 13·67	+3·1907	+0·0055		404
405	Orionis	...	5·4	...	96·11	3	5 5 56·86	+3·4435	+0·0072	−0·0021	405

373. Orange. 378. Orange-red. 379. B.D. magnitude, 8·0; Albany, 7·1. The N.P.D. given in the Lalande Catalogue is 1′ too great. 380. Harvard magnitude, 6·4; B.D., 7·3. 388. About 0·3 magnitude brighter than No. 387. 391. Wide double (Σ 630); brighter observed. Companion follows, north, magnitude 8·1. 395. 1899 Jan. 14, Red. 1899 Feb. 14, Reddish. The limits of magnitude are 6 and 7; the period is 32 days. 396. Red.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
361	97·73	3	67 14 4·7	−7·166	+0·493	+0·009	648	8815			1113	1451	+22 739	361
362	99·13	3	89 37 0·1	−6·894	+0·425	0·000		8934	808				+ 0 834	362
363	96·07	3	71 26 46·0	−6·822	+0·482	+0·064		8937				1468	+18 719	363
364	00·84	5	93 26 16·1	−6·817	+0·414	+0·002	657	8958	827		1129	1470	− 3 876	364
365	02·08	3	85 49 21·8	−6·804	+0·437			8952	825	1398			+ 4 749	365
366	99·07	3	87 27 49·9	−6·591	+0·434	−0·110		9031	875	1420			+ 2 773	366
367	98·98	3	86 35 14·7	−6·570	+0·437			9037	881	1424			+ 3 681	367
368	96·07	3	74 16 12·1	−6·527	+0·476	−0·010	660	9038				1481	+15 687	368
369	97·81	4	71 19 48·5	−6·402	+0·487	+0·034	666	9081				1490	+18 743	369
370	99·13	3	89 1 24·3	−6·396	+0·431			9101	936	1439			+ 0 871	370
371	98·13	4	90 20 19·0	−6·313	+0·427									371
372	96·73	3	66 51 1·6	−6·235	+0·504			9136				1497	+23 757	372
373	99·08	3	87 39 25·1	−6·183	+0·436	+0·014	675	9183	990	1459		1500	+ 2 800	373
374	99·15	3	88 35 40·8	−6·134	+0·434			9207		1467			+ 1 847	374
375	00·11	3	87 43 23·4	−6·110	+0·436	+0·007	680	9213	1023	1471	1156	1504	+ 2 810	375
376	02·06	3	89 41 40·6	−6·054	+0·431			9235	1041				+ 0 893	376
377	96·08	3	65 34 2·3	−6·016	+0·511			9223				1508	+24 709	377
378	02·09	4	56 59 31·3	−5·990	+0·546	+0·003	677	9221			1160	1509	+32 855	378
379	99·15	3	85 29 3·1	−5·978	+0·444	+0·290		9253	1055	1480			+ 4 782	379
380	90·02	3	84 45 36·3	−5·975	+0·447			9255	1057	1481			+ 5 769	380
381	99·15	3	88 32 6·8	−5·960	+0·435			9261		1483			+ 1 857	381
382	97·38	3	73 0 10·6	−5·897	+0·485	−0·010	686	9271				1517	+16 672	382
383	98·02	3	66 12 25·9	−5·884	+0·510	+0·010	684	9262				1518	+23 777	383
384	97·44	3	65 6 13·3	−5·860	+0·514	+0·049	685	9274				1519	+24 717	384
385	99·05	3	88 26 21·9	−5·748	+0·437	−0·001	695	9358	1119	1513		1523	+ 1 872	385
386	97·80	3	90 7 3·4	−5·737	+0·431									386
387	99·10	3	86 32 1·8	−5·587	+0·444			9418		1525			+ 3 736	387
388	99·10	3	86 31 58·3	−5·585	+0·444			9419	1162	1526			+ 3 737	388
389	99·14	3	85 34 47·5	−5·570	+0·447			9426	1171	1528			+ 4 811	389
390	99·09	3	89 25 23·2	−5·469	+0·435			9462	1207			1540	+ 0 923	390
391	99·11	3	88 32 12·8	−5·458	+0·438			9465		1537			+ 1 886	391
392	96·08	3	68 33 9·7	−5·433	+0·505	+0·040	698	9450				1542	+21 751	392
393	96·08	3	70 19 51·2	−5·220	+0·500	+0·009		9536				1556	+19 847	393
394	98·03	3	63 42 25·8	−5·215	+0·525			9531				1557	+26 783	394
395	99·09	3	88 57 36·0	−5·170	+0·438			9581	1296	1565		1559	+ 0 939	395
396	02·04	3	112 30 18·9	−5·086	+0·360	+0·068	713	9647			1208	1561	−22 1000	396
397	97·48	3	71 29 20·5	−5·060	+0·497	−0·022	705	9599			1209	1562	+18 779	397
398	98·71	3	69 42 48·4	−5·030	+0·503	+0·029	708	9615				1565	+20 885	398
399	97·77	3	68 25 38·4	−5·026	+0·508	−0·003	707	9613				1566	+21 766	399
400	98·77	3	65 52 0·4	−5·019	+0·518	0·000	706	9612				1567	+24 755	400
401	97·76	3	70 16 11·2	−4·941	+0·502	−0·003	710	9648				1570	+19 853	401
402	98·43	3	62 5 47·0	−4·896	+0·534			9653					+27 732	402
403	99·12	3	86 54 35·5	−4·877	+0·447			9699		1588			+ 3 785	403
404	99·14	3	84 48 37·8	−4·747	+0·454			9745	30	1596			+ 5 827	404
405	96·11	3	74 4 40·0	−4·685	+0·490	−0·008							+15 759	405

362. Authority for Proper Motions: Bossert. 363, 393. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 366. Authority for Proper Motions: Boss. 379. The Proper Motions have been specially computed for the present catalogue. 405. Authority for Proper Motions: Auwers (Berlin A).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Preces.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
406	Orionis	7·4	2	99·12	3	5 6 27·92	+3·1702	+0·0053	+0·0130	406
407	Orionis	7·1	4	02·10	3	5 6 32·92	+3·0816	+0·0049		407
408	Orionis	6·9	1	99·15	3	5 6 35·74	+3·0935	+0·0049		408
409	17 Orionis ρ	4·7	...	99·14	3	5 8 3·69	+3·1351	+0·0051	−0·0013	409
410	Orionis	6·8	1	99·11	3	5 8 19·78	+3·1148	+0·0050		410
411	Orionis	6·6	4	99·15	3	5 8 38·72	+3·0828	+0·0048		411
412	Orionis	5·8	...	00·11	3	5 9 25·06	+3·1878	+0·0053		412
413	19 Orionis β	0·4	...	99·35	13	5 9 43·85	+2·8820	+0·0039	−0·0012	413
414	Aurigae	6·9	...	97·44	3	5 10 55·99	+3·7907	+0·0094		414
415	Orionis	6·9	1	99·04	3	5 11 29·43	+3·1146	+0·0048		415
416	109 Tauri n	5·1	...	96·79	3	5 13 16·02	+3·6015	+0·0075	+0·0011	416
417	Tauri	6·3	...	98·41	3	5 13 19·65	+3·5500	+0·0072	−0·0022	417
418	21 Orionis	5·9	3	99·14	3	5 13 58·16	+3·1297	+0·0047	−0·0022	418
419	Tauri	6·6	...	97·79	3	5 14 24·36	+3·5361	+0·0069	−0·0027	419
420	Tauri	6·4	...	98·75	3	5 14 42·55	+3·7654	+0·0086	−0·0031	420
421	Aurigae	6·0	1	98·10	3	5 14 50·88	+3·8135	+0·0090		421
422	Tauri	6·5	...	98·77	3	5 15 2·06	+3·5425	+0·0069	−0·0004	422
423	Orionis	6·7	2	99·16	3	5 15 30·48	+3·1287	+0·0046		423
424	Orionis	6·7	...	02·05	3	5 15 38·30	+3·1375	+0·0046		424
425	Orionis	6·4	...	99·16	3	5 16 2·86	+3·1624	+0·0047		425
426	Orionis	7·2	2	01·08	3	5 17 32·01	+3·1348	+0·0045		426
427	23 Orionis m	5·6	2	99·15	3	5 17 34·61	+3·1519	+0·0046	−0·0014	427
428	Orionis	8·0	2	99·15	3	5 17 35·66	+3·1521	+0·0046		428
429	111 Tauri	5·1	...	98·45	3	5 18 35·26	+3·4821	+0·0061	+0·0157	429
430	Orionis	7·1	2	99·10	3	5 19 23·46	+3·1247	+0·0044		430
431	25 Orionis ψ^1	4·8	...	00·10	3	5 19 33·32	+3·1131	+0·0043	−0·0026	431
432	112 Tauri β	1·7	...	99·24	8	5 19 58·14	+3·7882	+0·0079	+0·0013	432
433	Orionis	6·7	1	01·09	3	5 20 38·56	+3·0826	+0·0041		433
434	Orionis	8·0*	...	02·12	3	5 21 6·58	+3·1595	+0·0044		434
435	115 Tauri	5·3	...	96·08	3	5 21 20·03	+3·4978	+0·0059	−0·0011	435
436	Orionis	7·5	1	02·17	3	5 21 28·22	+3·1648	+0·0044		436
437	30 Orionis ψ^2	5·1	2	99·16	3	5 21 35·83	+3·1420	+0·0043	−0·0010	437
438	114 Tauri o	4·8	...	98·76	3	5 21 37·64	+3·6013	+0·0065	−0·0011	438
439	Orionis	7·1	1	01·12	3	5 21 52·15	+3·1596	+0·0043		439
440	Orionis	6·8	1	99·10	3	5 22 2·72	+3·1247	+0·0042		440
441	117 Tauri	6·0	...	98·41	3	5 22 13·29	+3·4798	+0·0057	−0·0004	441
442	Orionis	7·0	1	01·13	3	5 22 51·22	+3·1007	+0·0041		442
443	118 Tauri	5·4	...	98·72	3	5 23 7·15	+3·6900	+0·0068	+0·0004	443
444	Orionis	7·3	1	01·55	5	5 23 34·25	+3·1087	+0·0040		444
445	Orionis	6·8	2	01·39	4	5 24 43·36	+3·1122	+0·0040		445
446	Orionis	6·4	...	00·15	3	5 25 2·79	+3·1681	+0·0042		446
447	33 Orionis n^1	7·4	3	99·15	3	5 25 59·62	+3·1470	+0·0040	−0·0016	447
448	119 Tauri	4·9	...	98·78	3	5 26 20·91	+3·5157	+0·0055	−0·0003	448
449	Tauri	5·5	...	98·44	3	5 26 26·29	+3·4766	+0·0053	−0·0008	449
450	34 Orionis δ	3·0	1	98·13	6	5 26 53·79	+3·0641	+0·0037	−0·0014	450

408. Companion, magnitude 9, just precedes and is south. 409. Orange. Companion, magnitude 9, blue, follows north. 411. Reddish. 412. Light orange. 437. Double. Companion, magnitude 9·3, precedes north. 438. Blue. 439. Followed 9ˢ, about 2′ south, by a star (B.D. +3° 905), magnitude 8·5. 443. North, following and brighter of two stars observed. 447. Close double; brighter observed. Companion, magnitude 8·4, follows north. 448. Reddish. 449. Double. Brighter observed. The companion, following south, is only slightly fainter.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
406	99·12	3	85 42 54·7	−4·641	+0·452	+0·100			55	1600			+ 4 858	406
407	02·10	3	89 36 28·3	−4·634	+0·439			9767	61				+ 0 974	407
408	99·15	3	89 5 7·0	−4·630	+0·441				64	1602			+ 0 975	408
409	99·14	3	87 15 27·1	−4·505	+0·447	+0·001	725		103	1608		1594	+ 2 888	409
410	99·11	3	88 9 2·6	−4·482	+0·445			9802		1614			+ 1 938	410
411	99·15	3	89 33 24·3	−4·456	+0·440			9806	126				+ 0 988	411
412	00·11	3	84 57 34·9	−4·390	+0·456			9820		1623		1606	+ 4 877	412
413	02·06	3	98 19 0·7	−4·363	+0·412	−0·005	736	9834	163		1248	1609	− 8 1063	413
414	97·44	3	61 12 20·3	−4·260	+0·542			9827				1613	+28 772	414
415	99·04	3	88 9 48·0	−4·212	+0·446			9878		1639			+ 1 957	415
416	96·79	3	68 0 24·4	−4·061	+0·516	+0·082	741	9909				1622	+21 816	416
417	98·41	3	69 58 12·9	−4·055	+0·509	+0·021		9913				1623	+19 893	417
418	99·14	3	87 30 27·7	−4·000	+0·449	+0·048	744	9953	248	1653			+ 2 916	418
419	97·79	3	70 31 27·4	−3·963	+0·507	+0·020		9948				1625	+19 898	419
420	98·75	3	62 8 38·1	−3·937	+0·540	+0·015		9944				1627	+27 758	420
421	98·10	3	60 31 53·7	−3·925	+0·547			9947				1628	+29 869	421
422	98·77	3	70 17 12·8	−3·909	+0·508	+0·012		9963				1630	+19 902	422
423	99·16	3	87 33 25·8	−3·868	+0·449			10002	287	1663			+ 2 924	423
424	02·05	3	87 10 21·3	−3·857	+0·451			10012	291	1664			+ 2 926	424
425	99·16	3	86 5 15·8	−3·822	+0·454			10028	303	1667			+ 3 857	425
426	01·08	3	87 17 55·9	−3·694	+0·451			10086		1683			+ 2 936	426
427	99·15	3	86 33 6·9	−3·690	+0·453	+0·002	753	10088	342	1684			+ 3 871	427
428	99·15	3	86 32 38·7	−3·689	+0·453			10089	343	1685			+ 3 872	428
429	98·45	3	72 42 33·4	−3·604	+0·501	−0·006	754	10097			1284	1641	+17 920	429
430	99·10	3	87 44 19·9	−3·534	+0·450			10133		1703			+ 2 947	430
431	00·10	3	88 14 42·1	−3·520	+0·448	+0·009	763	10145	391	1708			+ 1 1005	431
432	00·09	3	61 28 36·6	−3·485	+0·546	+0·180	756	10114			1295	1647	+28 795	432
433	01·09	3	89 34 7·1	−3·427	+0·444			10181	414				+ 0 1056	433
434	02·12	3	86 13 54·8	−3·386	+0·456				430	1718			+ 3 898	434
435	96·08	3	72 7 24·6	−3·367	+0·504	+0·003	767	10179				1655	+17 928	435
436	02·17	3	86 0 14·6	−3·355	+0·456				444	1721			+ 3 899	436
437	99·16	3	86 59 28·0	−3·344	+0·453	+0·006	773	10212		1723	1303	1658	+ 2 962	437
438	98·76	3	68 8 53·8	−3·342	+0·519	−0·006	768	10185			1302	1657	+21 847	438
439	01·12	3	86 13 48·8	−3·321	+0·456			10221	458	1726			+ 3 903	439
440	99·10	3	87 44 39·9	−3·306	+0·451				466	1729			+ 2 965	440
441	98·41	3	72 50 37·8	−3·290	+0·502	+0·045		10217				1660	+17 931	441
442	01·13	3	88 47 7·8	−3·236	+0·448			10264		1736		1663	+ 1 1021	442
443	98·72	3	64 55 49·2	−3·213	+0·533	+0·018	775	10231				1666	+25 839	443
444	01·15	3	88 26 16·7	−3·174	+0·449			10292	509	1751			+ 1 1026	444
445	01·13	3	88 17 23·8	−3·074	+0·450			10328		1764			+ 1 1032	445
446	00·15	3	85 52 22·0	−3·046	+0·458			10339	543	1768			+ 4 949	446
447	99·15	3	86 47 2·2	−2·964	+0·455	+0·005	784	10375	568	1779			+ 3 948	447
448	98·78	3	71 28 48·2	−2·934	+0·508	+0·002	783	10367			1327	1683	+18 875	448
449	98·44	3	73 0 56·3	−2·926	+0·503	−0·005						1685	+16 794	449
450	98·12	3	90 22 22·4	−2·886	+0·444	+0·005	787	10404	604		1331	1688	− 0 983	450

406. Authority for Proper Motions: Boss.

417, 419, 420, 422. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis).

441, 449. Authority for Proper Motions: Auwers (Berlin A).

No.	Constellation.		Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
							h. m. s.	s.	s.	s.	
451	120 Tauri	...	5·6	...	96·06	3	5 27 39·90	+3·5148	+0·0053	+0·0001	451
452	Tauri	...	6·1	...	98·46	3	5 27 42·10	+3·5650	+0·0056	−0·0017	452
453	11 Leporis	α	2·6	...	00·84	4	5 28 19·10	+2·6452	+0·0029	−0·0011	453
454	Orionis	...	6·4	...	01·12	3	5 28 47·09	+3·1037	+0·0037		454
455	38 Orionis	n^2	5·8	2	99·15	3	5 29 0·95	+3·1584	+0·0039	−0·0025	455
456	121 Tauri	...	5·1	...	98·06	3	5 29 20·56	+3·6618	+0·0058	−0·0003	456
457	46 Orionis	ε	1·6	...	99·77	6	5 31 8·26	+3·0434	+0·0034	−0·0018	457
458	122 Tauri	...	5·5	...	98·76	3	5 31 15·48	+3·4777	+0·0048	+0·0024	458
459	123 Tauri	ζ	3·0	...	98·80	3	5 31 40·03	+3·5841	+0·0052	−0·0007	459
460	Orionis	...	7·5	...	02·15	3	5 31 55·02	+3·1819	+0·0037		460
461	Aurigae	...	6·0	...	98·77	3	5 32 56·75	+3·8134	+0·0060		461
462	125 Tauri	...	5·1	...	97·76	3	5 33 32·31	+3·7158	+0·0055	0·0000	462
463	47 Orionis	ω	5·2	3	99·14	3	5 33 54·26	+3·1671	+0·0036	−0·0003	463
464	Orionis	...	7·3	1	99·16	3	5 34 38·24	+3·1060	+0·0034		464
465	Orionis	...	7·2	2	01·11	3	5 35 26·09	+3·1896	+0·0035		465
466	126 Tauri	...	4·8	...	96·11	3	5 35 30·90	+3·4659	+0·0043	+0·0001	466
467	Orionis	...	6·7	1	02·13	4	5 35 57·45	+3·0794	+0·0033		467
468	Columbae	α	2·7	...	01·43	3	5 36 1·55	+2·1716	+0·0028	+0·0050	468
469	Orionis	...	7·2	1	00·11	3	5 36 10·45	+3·1594	+0·0034		469
470	Orionis	...	7·2	1	00·12	3	5 37 4·81	+3·1265	+0·0033		470
471	Tauri	...	6·3	1	96·10	3	5 37 15·06	+3·6416	+0·0047		471
472	51 Orionis	b	6·0	1	01·11	3	5 37 18·30	+3·1058	+0·0032	−0·0050	472
473	Orionis	...	7·1	2	99·09	3	5 39 45·27	+3·1651	+0·0032		473
474	Orionis	...	6·2	1	99·12	3	5 41 25·39	+3·0991	+0·0030	−0·0049	474
475	130 Tauri	...	5·7	1	98·08	3	5 41 36·26	+3·4978	+0·0037	−0·0013	475
476	132 Tauri	...	5·0	...	98·17	3	5 42 52·66	+3·6812	+0·0040	−0·0009	476
477	53 Orionis	κ	2·3	1	98·00	18	5 43 0·75	+2·8447	+0·0026	−0·0017	477
478	Orionis	...	8·3*	...	00·05	3	5 43 3·52	+3·1094	+0·0029		478
479	Orionis	...	7·4	1	00·13	3	5 43 37·00	+3·0888	+0·0028		479
480	Tauri	...	5·7	...	96·76	3	5 44 39·93	+3·7801	+0·0040		480
481	Orionis	...	6·1	1	99·12	3	5 44 55·39	+3·1752	+0·0029		481
482	Orionis	...	7·0	1	02·37	4	5 45 17·97	+3·1192	+0·0028		482
483	Tauri	...	6·3	1	98·15	3	5 46 27·96	+3·5543	+0·0033	−0·0022	483
484	55 Orionis	...	5·3	...	95·31	4	5 46 32·25	+2·8960	+0·0025	−0·0014	484
485	15 Leporis	δ	3·9	...	95·10	3	5 47 1·15	+2·5634	+0·0024	+0·0158	485
486	136 Tauri	...	4·7	...	96·76	3	5 47 2·42	+3·7701	+0·0036	+0·0002	486
487	56 Orionis	...	5·7	2	00·10	4	5 47 14·81	+3·1154	+0·0027	−0·0012	487
488	54 Orionis	χ^1	4·7	1	97·45	3	5 48 27·59	+3·5655	+0·0031	−0·0154	488
489	Orionis	...	6·6	1	99·11	3	5 49 0·49	+3·1476	+0·0026		489
490	57 Orionis	χ^2	5·8	...	98·46	3	5 49 1·41	+3·5516	+0·0030	−0·0016	490
491	Orionis	...	6·6	2	99·16	3	5 49 34·40	+3·0949	+0·0025		491
492	58 Orionis	α	Var.	...	98·75	10	5 49 45·40	+3·2459	+0·0026	+0·0008	492
493	Aurigae	...	6·4	...	98·46	3	5 50 12·58	+3·8109	+0·0032		493
494	Orionis	...	5·8	...	98·73	3	5 50 48·58	+3·6740	+0·0029		494
495	139 Tauri	...	4·7	...	98·47	3	5 51 47·29	+3·7226	+0·0028	0·0000	495

470. Light yellow. 487. Orange-red. 491. Orange. 492. Orange-red. The limits of magnitude are 1 and 1·4; the period is irregular.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Process.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
451	96·06	3	71 31 50·8	−2·820	+0·509	−0·008	786	10409				1693	+18 877	451
452	98·46	3	69 35 47·8	−2·817	+0·516	−0·002		10403				1694	+20 989	452
453	02·14	3	107 53 37·8	−2·763	+0·383	−0·010	796	10476			1339	1699	−17 1166	453
454	01·12	3	88 39 41·8	−2·723	+0·450			10465		1800			+1 1058	454
455	99·15	3	86 18 5·4	−2·703	+0·458	+0·021	793	10469	646	1804			+3 964	455
456	98·06	3	66 1 36·1	−2·674	+0·530	+0·019	790	10453				1702	+23 954	456
457	00·13	3	91 15 56·0	−2·519	+0·441	−0·006	809	10563			1366	1717	−1 969	457
458	98·76	3	73 1 16·3	−2·508	+0·504	+0·039	798	10537					+16 822	458
459	98·80	3	68 55 5·4	−2·473	+0·520	+0·024	800	10548			1368	1719	+21 908	459
460	02·14	3	85 17 34·7	−2·451	+0·462			10585	731	1818			+4 989	460
461	98·77	3	60 50 32·3	−2·362	+0·553			10582				1727	+29 947	461
462	97·76	3	64 9 31·6	−2·310	+0·539	+0·014	810	10605				1730	+25 902	462
463	99·14	3	85 56 7·6	−2·278	+0·460	−0·019	813	10654	789	1834		1734	+4 1002	463
464	99·16	3	88 33 48·3	−2·214	+0·451			10682	817	1838			+1 1088	464
465	01·11	3	84 58 31·0	−2·145	+0·463			10718	836	1844			+4 1007	465
466	96·11	3	73 31 3·7	−2·138	+0·503	+0·013	817	10698*				1743	+16 841	466
467	02·12	3	89 42 54·2	−2·100	+0·448			10737	854		1390		+0 1152	467
468	02·81	3	124 7 39·1	−2·094	+0·316	+0·030					1393	1751		468
469	00·11	3	86 16 24·5	−2·081	+0·459				857	1849			+3 1007	469
470	00·12	3	87 40 55·5	−2·002	+0·454			10785	889	1855			+2 1040	470
471	96·10	3	66 50 34·1	−1·987	+0·529			10752				1755	+23 1015	471
472	01·11	3	88 34 25·8	−1·982	+0·452	+0·011	822	10795	892	1857			+1 1105	472
473	99·09	3	86 2 2·8	−1·769	+0·461			10869	955	1875		1759	+3 1025	473
474	99·12	3	88 52 0·3	−1·623	+0·451	+0·126		10940	990	1880			+1 1126	474
475	98·08	3	72 18 29·7	−1·608	+0·509	−0·001	832	10918				1765	+17 1004	475
476	98·17	3	65 27 57·2	−1·497	+0·536	+0·010	835	10966				1773	+24 970	476
477	97·33	5	99 42 17·7	−1·485	+0·414	−0·004	844	11013	1036		1423	1774	−9 1235	477
478	00·05	3	88 25 28·9	−1·481	+0·453			10996		1901			+1 1137	478
479	00·13	3	89 18 29·0	−1·432	+0·450			11027	1043				+0 1184	479
480	96·76	3	62 3 43·4	−1·341	+0·551			11021				1778	+27 888	480
481	99·12	3	85 36 19·7	−1·318	+0·463			11061	1083	1913			+4 1052	481
482	02·11	4	88 0 16·1	−1·285	+0·455			11073	1096	1921			+1 1148	482
483	98·15	3	70 9 27·5	−1·184	+0·518	−0·034		11088				1782	+19 1110	483
484	95·36	3	97 32 40·9	−1·177	+0·422	−0·003	853	11114			1436		−7 1187	484
485	95·10	3	110 53 14·2	−1·135	+0·374	+0·654	858	11142			1438	1785	−20 1211	485
486	96·76	3	62 24 39·9	−1·133	+0·550	+0·021	848	11090				1784	+27 899	486
487	99·09	3	88 10 9·5	−1·115	+0·454	+0·004	855	11125	1138	1930			+1 1151	487
488	97·45	3	69 44 31·9	−1·009	+0·520	+0·096	856	11133			1446	1790	+20 1162	488
489	99·11	3	86 47 36·3	−0·961	+0·459			11172	1187	1940			+3 1071	489
490	98·46	3	70 16 10·5	−0·960	+0·518	−0·009	857	11153			1448	1793	+19 1126	490
491	99·16	3	89 3 1·8	−0·912	+0·451			11189	1197	1943			+0 1208	491
492	98·76	3	82 36 40·7	−0·896	+0·473	−0·024	860	11185			1452	1795	+7 1055	492
493	98·46	3	61 4 25·6	−0·856	+0·556			11174					+28 952	493
494	98·73	3	65 45 54·0	−0·804	+0·536			11198					+24 1033	494
495	98·47	3	64 3 30·2	−0·718	+0·543	+0·009	862	11220			1458	1810	+25 1052	495

452. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 468. Authority for Proper Motions: Stone (Cape Catalogue, 1880). 474. Authority for Proper Motions: Boss. 483. Authority for Proper Motions: Auwers (Berlin A).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
496	Orionis	8·1	1	02·12	3	5 52 8·80	+3·1893	+0·0024		496
497	Orionis	6·9	1	99·15	3	5 52 44·47	+3·1010	+0·0023		497
498	Orionis	7·5	1	99·09	3	5 53 1·79	+3·1158	+0·0023		498
499	59 Orionis	6·5	1	99·09	3	5 53 12·75	+3·1154	+0·0023	+0·0007	499
500	60 Orionis	6·0	2	00·15	4	5 53 41·02	+3·0854	+0·0023	−0·0013	500
501	Orionis	7·6	1	98·79	3	5 55 35·21	+3·1407	+0·0021		501
502	Orionis	6·5	...	99·10	3	5 57 5·81	+3·1123	+0·0021		502
503	64 Orionis ... ... χ^3	5·7	1	96·14	3	5 57 32·14	+3·5511	+0·0020	+0·0016	503
504	62 Orionis ... ... χ^4	4·5	2	97·45	3	5 57 58·81	+3·5630	+0·0019	0·0000	504
505	1 Geminorum	4·1	...	98·53	16	5 58 2·45	+3·6476	+0·0019	−0·0010	505
506	66 Orionis	6·3	2	99·13	3	5 59 41·32	+3·1700	+0·0019	−0·0026	506
507	Aurigae	6·3	...	97·47	3	5 59 59·34	+3·8297	+0·0016		507
508	Orionis	7·2	2	00·15	4	6 0 13·86	+3·0872	+0·0019		508
509	67 Orionis ... ... ν	4·2	...	99·72	8	6 1 51·67	+3·4254	+0·0016	−0·0003	509
510	Geminorum	6·0	...	98·48	3	6 3 30·60	+3·6183	+0·0012	−0·0043	510
511	3 Geminorum	5·7	...	98·47	3	6 3 39·62	+3·6437	+0·0012	+0·0001	511
512	Orionis	5·8†	...	99·12	3	6 3 44·68	+3·1315	+0·0016		512
513	Orionis	6·8†	...	99·12	3	6 3 46·59	+3·1313	+0·0016		513
514	Orionis	6·9	1	01·13	3	6 4 35·01	+3·1402	+0·0016		514
515	Orionis	7·2	1	00·12	3	6 5 9·65	+3·1409	+0·0015		515
516	Orionis	8·4*	...	02·17	3	6 5 20·39	+3·1636	+0·0015		516
517	Leporis	5·7	...	95·04	3	6 5 35·95	+2·5121	+0·0020		517
518	68 Orionis	5·7	...	98·45	3	6 6 5·87	+3·5542	+0·0010	+0·0014	518
519	Orionis	6·5	1	98·10	3	6 7 40·66	+3·5251	+0·0008	−0·0024	519
520	Orionis	6·0	2	98·81	3	6 8 38·12	+3·5050	+0·0008	0·0000	520
521	7 Geminorum ... η	Var.	...	97·03	4	6 8 50·40	+3·6270	+0·0005	−0·0050	521
522	71 Orionis	5·1	...	98·83	3	6 8 57·80	+3·5377	+0·0007	−0·0079	522
523	44 Aurigae ... ... κ	4·4	...	98·77	3	6 9 0·29	+3·8295	+0·0001	−0·0052	523
524	8 Geminorum	6·1	...	98·82	3	6 10 12·48	+3·6674	+0·0002	−0·0028	524
525	Monocerotis	6·4	...	99·16	3	6 10 29·67	+3·1735	+0·0011		525
526	Orionis	6·5	...	98·48	3	6 10 35·11	+3·4864	+0·0006	0·0000	526
527	Orionis	7·0	1	99·17	3	6 10 43·90	+3·1007	+0·0013		527
528	Orionis	7·8*	...	02·13	3	6 11 7·35	+3·0739	+0·0013		528
529	Orionis	6·4	...	02·20	3	6 11 11·16	+3·0987	+0·0012		529
530	Orionis ... .:.	8·1*	...	02·44	3	6 11 52·51	+3·1129	+0·0012		530
531	Monocerotis	5·9	...	02·16	3	6 11 58·22	+3·1926	+0·0010	−0·0150	531
532	Orionis	6·3	1	98·43	3	6 13 12·91	+3·4900	+0·0003		532
533	Aurigae	6·7	1	97·68	4	6 14 48·89	+3·8301	−0·0009		533
534	Orionis	6·5	...	98·17	3	6 15 35·79	+3·5012	0·0000	+0·0050	534
535	Orionis	6·3	...	99·12	3	6 16 13·16	+3·1266	+0·0009		535
536	13 Geminorum ... μ	3·3	1	97·57	13	6 16 54·60	+3·6267	−0·0005	+0·0037	536
537	Monocerotis	6·9	...	02·13	3	6 17 28·07	+3·1720	+0·0007		537
538	Monocerotis	7·2	1	00·17	3	6 18 2·30	+3·1616	+0·0007		538
539	2 Canis Majoris ... β	2·0	...	98·39	8	6 18 17·71	+2·6422	+0·0016	−0·0015	539
540	8 Monocerotis	4·0†	...	99·13	3	6 18 28·11	+3·1810	+0·0006	−0·0012	540

508. Orange. 510. Reddish-orange. 521. The limits of magnitude are 3·2 and 4·2; the period is 231 days. 526. Reddish. 536. Orange-red. 538. A star (B.D. + 3° 1218), magnitude 8, precedes about 22ˢ, and is slightly south. 540. B.D. magnitude, 4·9; Albany, 4·7.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (I), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
496	02·12	3	85 0 40·8	−0·687	+0·465			11263	1263	1952			+ 4 1082	496
497	99·15	3	88 47 13·9	−0·635	+0·452			11288	1282	1957			+ 1 1168	497
498	99·09	3	88 9 14·1	−0·610	+0·454			11301	1289	1958			+ 1 1170	498
499	99·09	3	88 10 21·9	−0·594	+0·454	+0·011	869	11307	1295	1959		1823	+ 1 1171	499
500	99·15	3	89 27 22·4	−0·553	+0·450	−0·002	870	11329	1309				+ 0 1239	500
501	98·79	3	87 5 18·5	−0·386	+0·458			11398	1358	1983			+ 2 1106	501
502	99·10	3	88 18 23·9	−0·254	+0·454			11444	1403	2000			+ 1 1195	502
503	96·14	3	70 18 27·3	−0·216	+0·518	+0·012	878	11433			1484	1842	+19 1186	503
504	97·45	3	69 51 32·7	−0·177	+0·520	−0·006	881	11447			1485	1844	+20 1233	504
505	97·29	5	66 43 52·0	−0·172	+0·532	+0·093	880	11445			1486	1845	+23 1170	505
506	99·13	3	85 50 8·1	−0·027	+0·462	+0·013	885	11527	1461	2011			+ 4 1116	506
507	97·47	3	60 28 46·6	−0·001	+0·559			11501				1849	+29 1112	507
508	99·16	3	89 22 48·2	+0·020	+0·450			11550	1482				+ 0 1270	508
509	01·12	3	75 13 9·9	+0·163	+0·499	+0·013	887	11602	1516		1505	1859	+14 1152	509
510	98·48	3	67 47 37·6	+0·307	+0·528	−0·011		11651				1868	+22 1198	510
511	98·47	3	66 52 12·8	+0·320	+0·531	+0·002	891	11656					+23 1226	511
512	99·12	3	87 29 3·9	+0·328	+0·456			11688	1586	2041		1873	+ 2 1139	512
513	99·12	3	87 29 15·4	+0·331	+0·456			11690	1589	2042		1874	+ 2 1140	513
514	01·13	3	87 6 40·0	+0·401	+0·458			11715	19	2049			+ 2 1144	514
515	00·12	3	87 4 45·4	+0·452	+0·458			11738	48	2053			+ 2 1147	515
516	02·17	3	86 6 31·9	+0·467	+0·461			11745	53	2054			+ 3 1147	516
517	95·04	3	112 45 25·4	+0·490	+0·366			11784			1524		−22 1330	517
518	98·45	3	70 11 13·0	+0·534	+0·518	+0·002	900					1890	+19 1253	518
519	98·10	3	71 17 35·6	+0·672	+0·513	+0·017	3235	11791				1907	+18 1129	519
520	98·81	3	72 3 55·6	+0·755	+0·510	+0·020		11839				1910	+17 1182	520
521	95·35	3	67 27 50·3	+0·773	+0·528	+0·003	909	11842			1539	1911	+22 1241	521
522	98·83	3	70 48 34·5	+0·784	+0·515	+0·170	911	11855			1540	1913	+19 1270	522
523	98·77	3	60 27 54·3	+0·788	+0·558	+0·263	907	11831				1912	+29 1154	523
524	98·82	3	65 59 50·9	+0·893	+0·534	+0·027	914	11896				1920	+24 1182	524
525	99·16	3	85 41 3·7	+0·918	+0·462			11927	217	2090			+ 4 1181	525
526	98·48	3	72 47 6·9	+0·926	+0·508	+0·010		11918				1924	+17 1191	526
527	99·17	3	88 47 58·3	+0·939	+0·451			11947		2094		1928	+ 1 1275	527
528	02·13	3	89 57 4·5	+0·973	+0·447				241				+ 0 1354	528
529	02·20	3	88 53 8·9	+0·979	+0·451			11961		2099			+ 1 1278	529
530	02·17	3	88 16 40·1	+1·039	+0·453				262	2102			+ 1 1285	530
531	02·16	3	84 52 7·2	+1·047	+0·465	−0·140		12018	265	2103			+ 5 1168	531
532	98·43	3	72 38 7·2	+1·156	+0·508			12007				1940	+17 1203	532
533	97·85	4	60 24 50·1	+1·295	+0·557								+29 1190	533
534	98·17	3	72 11 24·5	+1·364	+0·509	+0·070		12093				1950	+17 1214	534
535	99·12	3	87 41 6·7	+1·418	+0·454			12146	400	2129		1951	+ 2 1197	535
536	96·43	3	67 26 6·0	+1·478	+0·527	+0·101	929	12136			1574	1956	+22 1304	536
537	02·13	3	85 44 22·4	+1·527	+0·461			12184	439	2139			+ 4 1229	537
538	00·17	3	86 11 6·6	+1·577	+0·459				456	2144		1962	+ 3 1221	538
539	00·18	3	107 54 21·9	+1·599	+0·383	−0·003	936	12241			1578	1963	−17 1467	539
540	99·13	3	85 21 21·9	+1·614	+0·462	−0·010	931	12221		2149		1964	+ 4 1236	540

510. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 520, 526, 534. Authority for Proper Motions: Auwers (Berlin A). 531. Authority for Proper Motions: Porter.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
541	Monocerotis	6·7†	...	99·13	3	6 18 28·54	+3·1810	+0·0006	−0·0012	541
542	Monocerotis	7·1	...	02·17	3	6 18 33·97	+3·1360	+0·0007		542
543	Geminorum	6·6	...	96·65	5	6 18 34·12	+3·6969	−0·0010		543
544	Monocerotis ... T	Var.	1	97·80	3	6 19 49·07	+3·2396	+0·0003		544
545	Orionis	7·2	4	03·12	3	6 20 7·61	+3·1089	+0·0007		545
546	Monocerotis	6·3	...	02·17	3	6 20 33·85	+3·1268	+0·0006		546
547	Orionis	6·8	...	01·11	3	6 20 42·06	+3·0929	+0·0007		547
548	Orionis	6·5	...	02·14	3	6 21 49·47	+3·0936	+0·0006		548
549	77 Orionis	5·4	...	99·15	3	6 22 5·62	+3·0810	+0·0006	−0·0019	549
550	Monocerotis	5·9	2	99·14	3	6 22 6·56	+3·1417	+0·0005		550
551	18 Geminorum ... ν	4·0	...	98·51	11	6 23 1·51	+3·5641	−0·0011	−0·0022	551
552	Monocerotis	7·5	1	01·19	3	6 23 4·93	+3·1186	+0·0005		552
553	Monocerotis	6·4	...	00·17	3	6 24 1·25	+3·1357	+0·0004		553
554	Geminorum	6·2	...	96·07	3	6 25 22·26	+3·4791	−0·0010	−0·0012	554
555	Monocerotis	7·4	1	99·15	3	6 26 8·04	+3·1419	+0·0002		555
556	20 Geminorum	6·8	3	96·80	3	6 26 27·61	+3·5003	−0·0012	+0·0025	556
557	21 Geminorum	6·3	3	96·45	3	6 26 28·32	+3·5005	−0·0012	+0·0013	557
558	Monocerotis	6·8	...	02·12	3	6 26 36·66	+3·1892	0·0000		558
559	12 Monocerotis	6·8	1	00·12	4	6 27 0·74	+3·1872	0·0000	−0·0058	559
560	Geminorum	8·7	3	98·48	3	6 28 38·34	+3·4569	−0·0012		560
561	49 Aurigae	5·1	...	96·80	3	6 28 54·15	+3·7808	−0·0030	−0·0007	561
562	Monocerotis	7·2	1	99·14	3	6 28 54·31	+3·1416	0·0000		562
563	Monocerotis	7·0	2	99·16	3	6 29 16·60	+3·1898	−0·0002		563
564	Monocerotis	5·7	...	00·16	4	6 30 6·33	+3·0952	+0·0001		564
565	Monocerotis	6·5	...	02·14	3	6 30 42·21	+3·1788	−0·0002		565
566	24 Geminorum ... γ	2·3	1	99·17	17	6 31 56·06	+3·4645	−0·0016	+0·0023	566
567	53 Aurigae	5·6	...	97·44	3	6 32 2·52	+3·8086	−0·0036	−0·0031	567
568	Monocerotis	6·4	...	01·16	3	6 32 26·90	+3·1373	−0·0002		568
569	Monocerotis	6·2	...	99·14	3	6 32 33·83	+3·1895	−0·0004		569
570	54 Aurigae	6·5	2	97·13	3	6 33 14·72	+3·7865	−0·0037	−0·0025	570
571	Monocerotis	6·1	...	02·20	3	6 33 27·01	+3·1120	−0·0001		571
572	Monocerotis	7·2	2	03·12	3	6 33 31·11	+3·1835	−0·0004		572
573	25 Geminorum	6·6	...	96·08	3	6 35 2·70	+3·7838	−0·0039	−0·0014	573
574	Monocerotis	6·9	1	99·19	4	6 35 56·93	+3·0863	−0·0002	−0·0019	574
575	26 Geminorum	5·3	2	97·14	3	6 36 34·92	+3·4951	−0·0023	−0·0009	575
576	Monocerotis	7·0	...	02·15	4	6 36 49·84	+3·1498	−0·0005		576
577	27 Geminorum ... ε	3·5	1	96·48	3	6 37 46·73	+3·6941	−0·0037	−0·0018	577
578	Monocerotis	6·4	...	99·11	3	6 37 52·11	+3·1448	−0·0005		578
579	Monocerotis	5·8	...	00·18	3	6 38 22·18	+3·1656	−0·0007		579
580	28 Geminorum	5·5	...	98·15	3	6 38 25·21	+3·8055	−0·0046	−0·0015	580
581	31 Geminorum ... ξ	3·5	...	99·79	17	6 39 40·55	+3·3768	−0·0019	−0·0087	581
582	Monocerotis	7·6	1	00·18	3	6 40 15·19	+3·1809	−0·0008		582
583	9 Canis Majoris ... α	−1·7	...	03·19	2	6 40 44·55	+2·6810	+0·0010	−0·0372	583
584	Geminorum	6·7	1	97·14	4	6 41 32·86	+3·5077	−0·0029	0·0000	584
585	18 Monocerotis	5·0	1	99·15	3	6 42 38·71	+3·1306	−0·0007	−0·0020	585

541. B.D. magnitude, 8·2; Albany, 7·3. 544. 1898 Feb. 7, magnitude 7. The limits are 5·8 and 8·2; the period is 27 days. 552. Harvard magnitude, 6·3; B.D. 7·1. 560. Red. 563. B.D. magnitude, 8·0; Albany, 7·4. 566. Yellowish-green.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
541	99·13	3	85 21 10·2	+1·615	+0·462	−0·010	932	12222		2150		1965	+ 4 1237	541
542	02·17	3	87 16 58·1	+1·623	+0·455			12226		2151			+ 2 1213	542
543	97·05	3	64 53 55·1	+1·623	+0·537			12197				1966	+25 1255	543
544	97·80	3	82 51 34·6	+1·732	+0·470				507			1972	+ 7 1273	544
545	03·10	3	88 26 35·7	+1·759	+0·451			12280		2169			+ 1 1332	545
546	02·17	3	87 40 17·9	+1·797	+0·453			12300		2175			+ 2 1227	546
547	01·11	3	89 7 49·6	+1·809	+0·448				537	2179			+ 0 1414	547
548	02·14	3	89 5 58·6	+1·907	+0·448			12350	582	2193			+ 0 1421	548
549	99·15	3	89 38 26·3	+1·930	+0·446	−0·013	943		591				+ 0 1426	549
550	99·14	3	87 1 56·3	+1·932	+0·455					2195			+ 2 1237	550
551	98·83	3	69 43 27·7	+2·011	+0·516	+0·006	942	12361			1600	1986	+20 1441	551
552	01·19	3	88 1 28·7	+2·016	+0·452			12385	616	2201			+ 2 1244	552
553	00·17	3	87 17 17·9	+2·098	+0·454			12426	642	2206			+ 2 1253	553
554	96·07	3	72 59 29·1	+2·215	+0·503	+0·088						1997	+17 1275	554
555	99·15	3	87 1 10·2	+2·282	+0·454			12502		2225			+ 3 1279	555
556	96·80	3	72 8 59·9	+2·310	+0·506	−0·025	955	12492				2005	+17 1286	556
557	96·45	3	72 8 42·8	+2·311	+0·506	−0·041	956	12493				2006	+17 1286	557
558	02·12	4	84 59 9·7	+2·323	+0·461				723	2236			+ 5 1283	558
559	99·11	3	85 4 19·6	+2·358	+0·461	−0·009	957	12531	739	2245			+ 4 1304	559
560	98·48	3	73 50 53·5	+2·499	+0·499								+16 1194	560
561	96·80	3	61 53 58·9	+2·522	+0·546	+0·014	959	12553				2015	+28 1168	561
562	99·14	3	87 1 34·8	+2·523	+0·453			12596		2260			+ 3 1303	562
563	99·16	3	84 57 13·1	+2·555	+0·460			12606	805	2267			+ 5 1306	563
564	00·14	3	89 1 49·4	+2·627	+0·446			12637	840	2274			+ 0 1491	564
565	02·14	3	85 25 14·7	+2·679	+0·458					2280			+ 4 1335	565
566	99·13	3	73 30 54·6	+2·785	+0·499	+0·035	969	12680			1641	2028	+16 1223	566
567	97·44	3	60 55 47·2	+2·794	+0·549	+0·004	967	12661				2029	+29 1293	567
568	01·16	3	87 12 35·2	+2·830	+0·452			12714		2297			+ 2 1315	568
569	99·14	3	84 57 29·7	+2·840	+0·459				912	2301			+ 5 1334	569
570	97·13	3	61 38 54·7	+2·899	+0·545	+0·025	970	12709				2038	+28 1196	570
571	02·20	3	88 17 57·2	+2·916	+0·448			12754		2319			+ 1 1443	571
572	03·11	3	85 12 42·1	+2·922	+0·458				942	2320			+ 4 1365	572
573	96·08	3	61 42 38·8	+3·054	+0·544	−0·004	977	12770					+28 1207	573
574	99·19	3	89 24 41·1	+3·133	+0·443	−0·012		12855	1016			2047	+ 0 1546	574
575	97·14	3	72 15 23·3	+3·187	+0·502	+0·080	982	12850			1665	2049	+17 1357	575
576	02·15	3	86 39 20·6	+3·209	+0·452			12879	1041	2363			+ 3 1359	576
577	96·48	3	64 46 11·2	+3·291	+0·530	+0·005	983	12880				2053	+25 1406	577
578	99·11	3	86 52 5·6	+3·298	+0·451			12917	1074	2369			+ 3 1371	578
579	00·18	3	85 58 6·3	+3·341	+0·454			12940		2370			+ 4 1414	579
580	98·15	3	60 55 40·1	+3·346	+0·546	+0·014	986	12897				2055	+29 1327	580
581	00·15	3	76 59 46·8	+3·454	+0·484	+0·195	989	12964	1124		1677	2058	+13 1396	581
582	00·18	3	85 18 7·6	+3·504	+0·455			13001		2388			+ 4 1429	582
583	03·19	2	106 34 42·9	+3·546	+0·383	+1·199	994	13035			1681	2062	−16 1591	583
584	97·14	4	71 41 52·3	+3·615	+0·502	0·000		13021				2063	+18 1349	584
585	99·15	3	87 28 42·2	+3·710	+0·447	+0·012	995	13075		2416		2072	+ 2 1397	585

554, 584. Authority for Proper Motions: Auwers (Berlin A). 574. Authority for Proper Motions: Auwers (Astronomische Nachrichten, 3511). 583. The corrections applied for Orbital Motion are $+0^{s}{\cdot}13$ in R.A., and $+0''{\cdot}9$ in N.P.D. Authority: Auwers (Astronomische Nachrichten, 3084–5).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
586	Monocerotis	7·0	...	02·17	3	6 42 39·29	+ 3·0830	— 0·0005		586
587	Monocerotis	6·1	...	99·09	3	6 43 53·91	+ 3·0982	— 0·0007		587
588	33 Geminorum	5·8	...	96·08	3	6 44 4·45	+ 3·4568	— 0·0028	— 0·0025	588
589	36 Geminorum ... d	5·7	1	97·80	3	6 45 33·43	+ 3·5989	— 0·0040	— 0·0015	589
590	Geminorum	5·8	...	98·17	3	6 45 55·74	+ 3·6483	— 0·0045		590
591	34 Geminorum ... θ	3·5	...	98·39	4	6 46 11·86	+ 3·9589	— 0·0074	— 0·0002	591
592	Monocerotis	7·9	1	99·15	3	6 46 22·68	+ 3·1361	— 0·0010		592
593	Monocerotis	6·2	...	99·21	3	6 46 24·95	+ 3·1450	— 0·0010		593
594	Monocerotis	7·9*	...	02·17	3	6 46 38·96	+ 3·1846	— 0·0013		594
595	37 Geminorum	6·0	1	98·48	3	6 49 9·67	+ 3·6957	— 0·0053	— 0·0037	595
596	14 Canis Majoris ... θ	4·3	...	99·76	10	6 49 32·58	+ 2·7972	+ 0·0003	— 0·0105	596
597	Monocerotis	7·5	1	98·83	3	6 51 24·06	+ 3·1025	— 0·0011	0·0000	597
598	Monocerotis	8·0*	...	02·17	3	6 51 25·67	+ 3·0781	— 0·0010		598
599	39 Geminorum	6·2	...	98·46	3	6 52 37·67	+ 3·7136	— 0·0060	— 0·0134	599
600	Monocerotis	7·7*	...	01·15	3	6 53 1·20	+ 3·1644	— 0·0016		600
601	40 Geminorum	6·3	...	98·76	3	6 53 17·51	+ 3·7086	— 0·0060	— 0·0021	601
602	Monocerotis	6·0	...	99·19	3	6 53 41·41	+ 3·1577	— 0·0016		602
603	Cephei 51 (Hev.) ...	5·6	3	99·15	43	6 53 44·39	+ 29·7120	— 2·6204	— 0·0415	603
604	41 Geminorum	5·8	...	97·09	3	6 54 31·02	+ 3·4506	— 0·0038	— 0·0021	604
605	21 Canis Majoris ... ε	1·7	...	01·45	4	6 54 41·67	+ 2·3576	+ 0·0013	— 0·0011	605
606	42 Geminorum ... ω	5·2	...	98·09	3	6 56 19·14	+ 3·6598	— 0·0060	— 0·0016	606
607	Monocerotis	7·1	1	99·20	3	6 56 23·06	+ 3·1853	— 0·0019		607
608	Geminorum	6·2	...	98·49	3	6 56 36·48	+ 3·4913	— 0·0044	+ 0·0018	608
609	Geminorum	6·0	1	98·78	3	6 56 47·21	+ 3·4645	— 0·0041		609
610	Geminorum	6·3	1	98·83	3	6 57 9·12	+ 3·8058	— 0·0077	+ 0·0130	610
611	43 Geminorum ... ζ	Var.	...	00·13	3	6 58 10·66	+ 3·5621	— 0·0052	— 0·0011	611
612	Monocerotis	7·0	...	02·20	3	6 58 21·56	+ 3·1311	— 0·0016		612
613	Monocerotis	8·2*	...	99·22	3	6 59 5·00	+ 3·1795	— 0·0020		613
614	Monocerotis	6·5	...	99·21	3	6 59 9·33	+ 3·1096	— 0·0016		614
615	23 Canis Majoris ... γ	4·1	...	98·17	6	6 59 14·04	+ 2·7146	+ 0·0005	— 0·0018	615
616	44 Geminorum	5·9	...	98·09	3	6 59 17·14	+ 3·6156	— 0·0059	— 0·0010	616
617	Monocerotis	7·6	3	03·16	3	7 0 0·81	+ 3·0836	— 0·0014		617
618	Canis Majoris	6·4	...	95·42	3	7 0 31·50	+ 2·5545	+ 0·0009		618
619	Monocerotis	7·0	2	98·76	3	7 1 48·04	+ 3·1869	— 0·0022		619
620	45 Geminorum	5·7	...	96·45	3	7 2 37·91	+ 3·4440	— 0·0045	— 0·0016	620
621	25 Canis Majoris ... δ	2·1	...	97·39	4	7 4 19·45	+ 2·4397	+ 0·0011	— 0·0015	621
622	47 Geminorum	5·7	1	96·14	3	7 5 10·90	+ 3·7271	— 0·0080	— 0·0018	622
623	Monocerotis	7·3	1	99·11	3	7 5 57·01	+ 3·1479	— 0·0022		623
624	Monocerotis	8·2*	...	02·19	3	7 6 10·62	+ 3·1131	— 0·0020		624
625	48 Geminorum	5·8	...	98·18	3	7 6 21·85	+ 3·6511	— 0·0072	— 0·0025	625
626	51 Geminorum	5·3	...	99·61	18	7 7 37·73	+ 3·4474	— 0·0051	+ 0·0003	626
627	52 Geminorum	6·1	...	97·52	3	7 8 35·06	+ 3·6700	— 0·0077	+ 0·0027	627
628	Monocerotis	5·7	...	99·15	3	7 9 5·65	+ 3·1458	— 0·0023	— 0·0097	628
629	53 Geminorum	5·9	...	98·19	3	7 9 42·46	+ 3·7529	— 0·0090	— 0·0020	629
630	Canis Minoris	8·1*	...	02·18	3	7 9 42·64	+ 3·1838	— 0·0027		630

591. Light green. 603. Reddish-yellow. 609. Orange. 611. The limits of magnitude are 3·7 and 4·5; the period is 10 days. 614. Brighter than No. 607. A star (Albany 2597) one magnitude fainter precedes 4s and is 1′ north. 616. B.D. magnitude, 7·1; Berlin (B), 6·6. 619. Harvard magnitude, 6·0; B.D., 6·5. 626. Orange-red.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
586	02·17	3	89 33 2·6	+3·711	+0·440			13080	1220				+ 0 1604	586
587	99·09	3	88 53 9·1	+3·818	+0·442			13128	1268	2432			+ 1 1531	587
588	96·08	3	73 40 59·5	+3·833	+0·493	−0·025	997	13108					+16 1298	588
589	97·80	3	68 7 15·0	+3·960	+0·513	+0·038	1004					2083	+21 1405	589
590	98·17	3	66 16 47·0	+3·992	+0·520			13171				2085	+23 1518	590
591	00·13	3	55 55 4·6	+4·015	+0·564	+0·032	1003	13155			1704	2087	+34 1481	591
592	99·15	3	87 13 46·6	+4·030	+0·446			13221	1345	2459			+ 2 1437	592
593	99·21	3	86 50 20·4	+4·034	+0·447			13222		2461			+ 3 1437	593
594	02·17	3	85 6 58·6	+4·053	+0·453				1349	2465			+ 4 1476	594
595	98·48	3	64 29 56·0	+4·268	+0·525	−0·011	1007	13299				2101	+25 1496	595
596	00·13	3	101 54 47·2	+4·301	+0·397	+0·003	1011	13373			1720	2104	−11 1681	596
597	98·83	3	88 41 30·9	+4·460	+0·439	+0·560			1500	2511			+ 1 1600	597
598	02·17	3	89 45 50·1	+4·462	+0·436			13426					+ 0 1717	598
599	98·46	3	63 47 14·7	+4·564	+0·525	−0·083	1013					2118	+26 1405	599
600	01·15	3	85 58 12·7	+4·598	+0·447			13475		2528			+ 4 1522	600
601	98·76	3	63 56 59·6	+4·621	+0·524	+0·013	1015					2120	+26 1411	601
602	99·19	3	86 15 43·5	+4·655	+0·446			13491	1575	2533			+ 3 1488	602
603	99·69	35	2 47 39·5	+4·659	+4·212	+0·050					1716	2102	+87 51	603
604	97·09	3	73 46 57·8	+4·725	+0·487	−0·013	1020	13512				2124	+16 1354	604
605	02·21	3	118 50 7·2	+4·740	+0·332	−0·017	1023				1740	2126		605
606	98·09	3	65 38 30·8	+4·878	+0·516	−0·004	1021	13559				2128	+24 1502	606
607	99·20	3	85 2 23·9	+4·884	+0·448			13589	1664	2571			+ 5 1513	607
608	98·49	3	72 6 7·8	+4·903	+0·492	−0·034		13577					+17 1479	608
609	98·78	3	73 10 54·4	+4·918	+0·488							2131	+16 1363	609
610	98·83	3	60 29 42·4	+4·949	+0·536	+0·800		13576				2134	+29 1441	610
611	00·13	3	69 16 58·6	+5·036	+0·501	−0·001	1024	13635			1759	2141	+20 1687	611
612	02·20	3	87 24 57·7	+5·051	+0·440			13667	1734	2589			+ 2 1530	612
613	99·22	3	85 16 45·6	+5·112	+0·446					2596			+ 4 1567	613
614	99·21	3	88 21 47·0	+5·119	+0·436			13695		2599			+ 1 1665	614
615	02·18	3	105 29 8·2	+5·125	+0·381	+0·003	1028	13717			1765	2145	−15 1625	615
616	98·09	3	67 12 46·1	+5·130	+0·508	+0·005	1025					2144	+22 1566	616
617	03·16	3	89 31 10·6	+5·191	+0·432				1795				+ 0 1791	617
618	95·42	3	111 52 47·7	+5·234	+0·357			13773			1769		−21 1732	618
619	98·76	3	84 56 4·3	+5·342	+0·446			13781		2624			+ 5 1543	619
620	96·45	3	73 54 33·4	+5·412	+0·481	+0·104	1030	13796				2155	+16 1397	620
621	97·46	3	116 14 4·6	+5·554	+0·339	−0·007	1042				1781	2159		621
622	96·14	3	62 58 44·1	+5·627	+0·519	+0·045	1034					2165	+27 1327	622
623	99·11	3	86 38 39·1	+5·691	+0·438			13932	77	2672			+ 3 1584	623
624	02·18	3	88 11 48·0	+5·710	+0·433			13943		2675			+ 1 1722	624
625	98·18	3	65 42 14·5	+5·726	+0·508	+0·037	1038	13920				2168	+24 1558	625
626	99·17	4	73 40 15·4	+5·832	+0·478	+0·033	1046	13977			1804	2172	+16 1417	626
627	97·52	3	64 56 28·5	+5·912	+0·509	+0·105	1049	14003				2177	+25 1618	627
628	99·15	3	86 43 2·0	+5·954	+0·435	−0·030		14049	193	2694		2178	+ 3 1609	628
629	98·19	3	61 55 41·5	+6·005	+0·520	+0·006	1050	14033				2180	+28 1350	629
630	02·18	3	85 1 14·3	+6·006	+0·440			14070		2701			+ 5 1602	630

597. Authority for Proper Motions: Radcliffe (special computation) in R.A., and Porter in N.P.D. 603. Authority for Proper Motions: Auwers (Fundamental-Catalog). 608. Authority for Proper Motions: Auwers (Berlin A). 610. Authority for Proper Motions: Porter. 628. Authority for Proper Motions: Boss.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
631	24 Monocerotis	7·1	2	99·13	3	7 10 12·30	+ 3·0730	− 0·0018	− 0·0020	631
632	Geminorum	6·5	...	98·22	3	7 10 51·73	+ 3·7179	− 0·0087	+ 0·0050	632
633	54 Geminorum ... λ	3·7	...	97·51	3	7 12 20·73	+ 3·4545	− 0·0056	− 0·0039	633
634	Canis Minoris	6·6	2	99·17	3	7 14 8·81	+ 3·1375	− 0·0026		634
635	55 Geminorum ... δ	3·3	2	98·35	13	7 14 9·04	+ 3·5891	− 0·0074	− 0·0025	635
636	Canis Minoris	7·6	1	99·21	3	7 14 46·70	+ 3·1312	− 0·0025		636
637	Monocerotis	7·3	2	99·23	3	7 15 22·66	+ 3·0857	− 0·0022		637
638	Canis Minoris	7·4	1	00·16	3	7 15 28·30	+ 3·1560	− 0·0028		638
639	56 Geminorum	5·3	...	97·54	3	7 16 2·79	+ 3·5486	− 0·0071	− 0·0053	639
640	Monocerotis	6·9	1	99·17	3	7 16 55·47	+ 3·0808	− 0·0022		640
641	Monocerotis	6·6	...	99·19	3	7 17 18·97	+ 3·0924	− 0·0023	+ 0·0027	641
642	57 Geminorum ... A	5·1	...	98·21	3	7 17 22·75	+ 3·6674	− 0·0089	− 0·0063	642
643	58 Geminorum	6·0	...	98·48	3	7 17 27·65	+ 3·6117	− 0·0081	− 0·0037	643
644	Canis Minoris	8·0*	...	99·22	3	7 19 3·85	+ 3·1469	− 0·0029		644
645	60 Geminorum ... ι	3·8	...	98·79	3	7 19 30·87	+ 3·7411	− 0·0103	− 0·0097	645
646	Canis Minoris	8·0*	...	02·20	3	7 20 8·75	+ 3·1836	− 0·0033		646
647	61 Geminorum	5·8	...	98·51	3	7 21 2·71	+ 3·5406	− 0·0076	− 0·0019	647
648	3 Canis Minoris ... β	3·1	...	98·62	14	7 21 43·66	+ 3·2598	− 0·0042	− 0·0042	648
649	63 Geminorum	5·3	...	98·53	3	7 21 48·26	+ 3·5699	− 0·0081	− 0·0049	649
650	Canis Minoris	7·7*	...	99·20	3	7 22 8·15	+ 3·1089	− 0·0027		650
651	64 Geminorum ... b^1	5·0	...	96·47	3	7 23 6·63	+ 3·7464	− 0·0109	− 0·0039	651
652	Canis Minoris	7·6	1	99·19	3	7 23 29·36	+ 3·1270	− 0·0029		652
653	65 Geminorum ... b^2	5·0	...	00·19	5	7 23 35·56	+ 3·7402	− 0·0109	− 0·0022	653
654	Canis Minoris	7·3	1	99·14	3	7 25 11·06	+ 3·1493	− 0·0032		654
655	Canis Minoris	7·0	...	99·17	3	7 25 16·63	+ 3·1264	− 0·0030		655
656	Canis Minoris	8·0*	...	02·20	3	7 25 49·50	+ 3·0806	− 0·0026		656
657	Geminorum	5·7	...	97·94	4	7 26 2·42	+ 3·4601	− 0·0070	+ 0·0012	657
658	Canis Minoris	6·7	...	99·21	3	7 26 49·37	+ 3·1364	− 0·0032		658
659	Geminorum	7·0	1	98·15	3	7 26 51·04	+ 3·6025	− 0·0091		659
660	7 Canis Minoris ... δ^1	6·3	1	99·23	3	7 26 54·32	+ 3·1189	− 0·0030	− 0·0024	660
661	8 Canis Minoris ... δ^2	6·6	1	99·14	3	7 27 57·09	+ 3·1486	− 0·0034	− 0·0018	661
662	66 Geminorum ... α^1	2·8	...	00·09	5	7 28 12·78	+ 3·8502	− 0·0136	− 0·0151	662
663	66 Geminorum ... α^2	2·0	...	00·29	9	7 28 13·19	+ 3·8502	− 0·0136	− 0·0151	663
664	9 Canis Minoris ... δ^3	6·7	1	99·19	3	7 29 1·00	+ 3·1503	− 0·0034	− 0·0032	664
665	Canis Minoris	6·5	...	02·20	3	7 29 32·90	+ 3·1363	− 0·0033		665
666	Canis Minoris	7·1	...	99·20	3	7 29 42·39	+ 3·1734	− 0·0037		666
667	Canis Minoris	7·3	1	99·14	3	7 29 43·07	+ 3·1482	− 0·0035		667
668	69 Geminorum ... υ	4·3	...	97·14	3	7 29 45·60	+ 3·7055	− 0·0112	− 0·0023	668
669	Canis Minoris	6·8	...	02·20	3	7 32 29·88	+ 3·1189	− 0·0033		669
670	Canis Minoris	6·9	...	99·20	3	7 33 21·74	+ 3·0884	− 0·0030		670
671	74 Geminorum ... f	5·3	...	97·13	3	7 33 42·01	+ 3·4690	− 0·0079	− 0·0019	671
672	10 Canis Minoris ... α	0·5	...	98·62	12	7 34 4·02	+ 3·1903	− 0·0042	− 0·0474	672
673	Geminorum	6·3	..	98·16	3	7 34 59·29	+ 3·5984	− 0·0101		673
674	Canis Minoris	7·2	1	99·21	3	7 35 32·91	+ 3·1647	− 0·0039	− 0·0041	674
675	Canis Minoris	6·5	1	00·77	5	7 36 19·86	+ 3·1550	− 0·0038		675

635. Companion, magnitude 8·8, precedes south. 662, 663. The magnitudes given in the Harvard Photometry for these stars should be interchanged. 668. Orange-red.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
631	99·13	3	89 59 15·1	+6·047	+0·425	−0·008	1055	14093			1814		+ 0 1871	631
632	98·22	3	63 7 48·9	+6·101	+0·514	+0·170		14080				2186	+26 1508	632
633	97·51	3	73 16 44·5	+6·225	+0·476	+0·026	1058	14139			1824	2189	+16 1443	633
634	99·17	3	87 4 33·9	+6·375	+0·431			14234	350	2746			+ 2 1640	634
635	96·50	5	67 49 59·9	+6·375	+0·494	−0·003	1062	14197			1835	2195	+22 1645	635
636	99·21	3	87 21 16·9	+6·428	+0·430			14250	364	2752			+ 2 1644	636
637	99·23	3	89 24 38·3	+6·477	+0·423			14272	389				+ 0 1909	637
638	00·16	3	86 13 55·2	+6·485	+0·433				390	2762			+ 3 1649	638
639	97·54	3	69 22 2·7	+6·532	+0·487	+0·008	1065	14267				2207	+20 1775	639
640	99·17	3	89 38 1·1	+6·605	+0·421			14328	432				+ 0 1915	640
641	99·19	3	89 6 26·8	+6·637	+0·423	+0·080		14340	448	2791			+ 0 1916	641
642	98·21	3	64 45 25·0	+6·642	+0·502	+0·017	1068	14310				2210	+25 1660	642
643	98·48	3	66 51 42·9	+6·649	+0·494	+0·034	1070	14315				2211	+23 1698	643
644	99·22	3	86 37 38·9	+6·781	+0·429			14395	497	2804			+ 3 1670	644
645	98·79	3	62 0 10·2	+6·819	+0·510	+0·075	1072	14378				2220	+28 1385	645
646	02·20	3	84 57 9·9	+6·871	+0·433				533	2816			+ 5 1652	646
647	98·51	3	69 32 33·1	+6·944	+0·481	+0·011	1076	14426			1864	2228	+20 1805	647
648	00·17	3	81 30 32·3	+7·000	+0·443	+0·030	1079	14466	573		1872	2230	+ 8 1774	648
649	98·53	3	68 20 59·3	+7·006	+0·485	+0·101	1077				1874	2231	+21 1602	649
650	99·20	3	88 20 45·4	+7·034	+0·422			14497	598	2833			+ 1 1811	650
651	96·47	3	61 40 31·9	+7·113	+0·508	+0·053	1080	14494					+28 1396	651
652	99·19	3	87 30 41·3	+7·145	+0·423					2848			+ 2 1681	652
653	98·23	3	61 52 38·1	+7·153	+0·507	+0·018	1082	14513				2239	+28 1400	653
654	99·14	3	86 29 5·2	+7·283	+0·425			14603	694	2859			+ 3 1701	654
655	99·17	3	87 31 45·8	+7·290	+0·422				700	2860			+ 2 1685	655
656	02·20	3	89 38 5·4	+7·335	+0·415				717				+ 0 1971	656
657	97·94	4	72 42 3·9	+7·352	+0·466	+0·078		14620					+17 1596	657
658	99·21	3	87 3 45·1	+7·416	+0·422			14666	751	2878			+ 3 1708	658
659	98·15	3	66 53 56·7	+7·418	+0·485							2246	+23 1744	659
660	99·23	3	87 52 24·8	+7·423	+0·419	−0·023	1088	14672	754	2880			+ 2 1691	660
661	99·14	3	86 29 48·2	+7·508	+0·423	−0·038	1092		790	2891			+ 3 1715	661
662	01·64	3	57 53 35·3	+7·530	+0·517	+0·079	1087	14673			1910	2250	+32 1581	662
663	00·38	3	57 53 31·4	+7·530	+0·517	+0·079	1087	14673			1911	2251	+32 1581	663
664	99·19	3	86 24 40·8	+7·594	+0·422	−0·002	1095		815	2900			+ 3 1719	664
665	02·20	3	87 3 23·0	+7·637	+0·420			14769	829	2905			+ 3 1723	665
666	99·20	3	85 20 31·0	+7·650	+0·424			14774	834	2907			+ 4 1751	666
667	99·14	3	86 30 22·3	+7·651	+0·421				836	2908			+ 3 1725	667
668	97·14	3	62 52 54·3	+7·654	+0·496	+0·101	1094	14744				2259	+27 1424	668
669	02·20	3	87 50 49·2	+7·875	+0·415			14880	927	2932			+ 2 1720	669
670	99·20	3	89 16 6·8	+7·945	+0·410			14904	957	2938			+ 0 2026	670
671	97·13	3	72 5 50·8	+7·972	+0·461	−0·018	1103	14894			1938	2280	+18 1701	671
672	99·47	8	84 31 6·9	+8·001	+0·423	+1·027	1106	14914	977		1941	2281	+ 5 1739	672
673	98·16	3	66 45 0·4	+8·075	+0·477			14921					+23 1780	673
674	99·21	3	85 41 39·2	+8·120	+0·419	+0·089		14950	1022	2958			+ 4 1781	674
675	99·17	3	86 8 29·9	+8·182	+0·417			14970	1045	2964			+ 3 1758	675

632, 641, 674. Authority for Proper Motions: Porter. 657. Authority for Proper Motions: Auwers (Berlin A).
672. The corrections applied for Orbital Motion are $-0^{s}\cdot06$ in R.A., and $-0''\cdot6$ in N.P.D. Authority: Auwers (Astronomische Nachrichten, 1371–3).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Preces.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
676	Monocerotis	6·4	...	99·22	3	7 37 57·40	+ 3·0817	− 0·0031		676
677	76 Geminorum ... c	5·5	...	97·53	3	7 38 0·96	+ 3·6666	− 0·0117	− 0·0028	677
678	77 Geminorum ... κ	3·6	...	98·19	3	7 38 24·66	+ 3·6302	− 0·0110	− 0·0034	678
679	Canis Minoris	6·3	...	00·94	4	7 38 55·06	+ 3·1288	− 0·0037		679
680	78 Geminorum ... β	1·3	...	99·29	14	7 39 11·78	+ 3·7252	− 0·0129	− 0·0481	680
681	79 Geminorum	6·7	1	98·22	3	7 39 17·12	+ 3·5277	− 0·0093	− 0·0037	681
682	81 Geminorum ... g	5·0	...	98·20	3	7 40 20·06	+ 3·4838	− 0·0087	− 0·0062	682
683	Canis Minoris	7·6	1	00·80	5	7 41 25·71	+ 3·1171	− 0·0036		683
684	82 Geminorum	6·3	...	97·86	3	7 42 34·92	+ 3·5939	− 0·0109	− 0·0019	684
685	Canis Minoris	7·0	1	01·16	7	7 43 42·40	+ 3·1691	− 0·0044		685
686	7 Argûs ... ... ξ	3·5	...	99·63	11	7 45 5·26	+ 2·5237	+ 0·0009	− 0·0011	686
687	Canis Minoris	6·3	...	00·19	4	7 45 32·55	+ 3·1466	− 0·0042		687
688	Canis Minoris	6·6	...	99·22	3	7 45 34·34	+ 3·1714	− 0·0045		688
689	Monocerotis	6·6	...	00·19	3	7 45 45·51	+ 3·0797	− 0·0034		689
690	13 Canis Minoris ... ζ	6·0	1	99·18	3	7 46 30·77	+ 3·1149	− 0·0038	− 0·0036	690
691	Canis Minoris	6·6	...	99·19	3	7 46 52·41	+ 3·1465	− 0·0042		691
692	83 Geminorum ... ϕ	5·7	1	96·17	3	7 47 22·54	+ 3·6811	− 0·0132	− 0·0023	692
693	85 Geminorum	5·3	...	97·21	3	7 49 49·77	+ 3·5079	− 0·0101	− 0·0028	693
694	Canis Minoris	6·6	1	99·67	4	7 51 7·07	+ 3·1710	− 0·0047		694
695	1 Cancri	6·0	...	98·17	3	7 51 18·77	+ 3·4130	− 0·0085	− 0·0030	695
696	Canis Minoris	7·0	1	99·19	3	7 52 7·41	+ 3·1014	− 0·0039	− 0·0130	696
697	Cancri	6·0	...	98·22	3	7 52 49·15	+ 3·4282	− 0·0089	− 0·0014	697
698	14 Canis Minoris	5·5	...	00·20	4	7 53 9·53	+ 3·1239	− 0·0042	− 0·0123	698
699	Cancri	6·5	...	02·20	3	7 53 16·70	+ 3·1386	− 0·0044		699
700	2 Cancri ... ... ω^1	6·3	1	97·88	3	7 54 52·77	+ 3·6361	− 0·0133	− 0·0011	700
701	Cancri	6·4	...	98·51	3	7 55 2·51	+ 3·5910	− 0·0123	− 0·0040	701
702	3 Cancri	5·7	...	98·50	3	7 55 3·50	+ 3·4441	− 0·0094	− 0·0022	702
703	5 Cancri	5·9	...	98·51	3	7 55 48·33	+ 3·4243	− 0·0091	− 0·0018	703
704	Canis Minoris	5·6	...	02·44	4	7 55 56·51	+ 3·1782	− 0·0051		704
705	Canis Minoris	7·5	1	99·19	3	7 56 53·91	+ 3·1387	− 0·0045		705
706	Canis Minoris	5·0	1	99·22	3	7 57 3·77	+ 3·1259	− 0·0044	− 0·0024	706
707	6 Cancri	5·2	2	97·17	10	7 57 22·60	+ 3·6943	− 0·0149	− 0·0025	707
708	7 Cancri	6·3	1	98·54	3	7 57 56·26	+ 3·5512	− 0·0118	− 0·0051	708
709	Ursae Minoris	7·1	1	00·78	27	7 58 2·49	+ 65·5480	− 32·9572	− 0·1198	709
710	9 Cancri ... ... μ^1	6·2	...	98·22	3	8 0 22·91	+ 3·5618	− 0·0123	− 0·0028	710
711	Canis Minoris	7·3	2	99·19	3	8 0 35·76	+ 3·1222	− 0·0044		711
712	Monocerotis	6·4	...	02·44	4	8 0 43·23	+ 3·0669	− 0·0037		712
713	Canis Minoris	7·9*	...	02·22	3	8 1 3·95	+ 3·1022	− 0·0042		713
714	10 Cancri ... ... μ^2	5·5	...	97·90	3	8 1 52·78	+ 3·5352	− 0·0119	+ 0·0012	714
715	12 Cancri	6·2	...	98·18	3	8 3 7·07	+ 3·3576	− 0·0084	− 0·0008	715
716	15 Argûs ... ... ρ	2·9	...	98·90	14	8 3 17·07	+ 2·5612	+ 0·0010	− 0·0075	716
717	14 Cancri ... ... ψ^2	5·9	...	98·22	3	8 4 25·85	+ 3·6263	− 0·0142	− 0·0072	717
718	Cancri	6·1	...	98·21	3	8 5 21·79	+ 3·3770	− 0·0090	− 0·0008	718
719	Hydrae	7·1	...	02·46	4	8 5 27·22	+ 3·1374	− 0·0048		719
720	16 Cancri ... ... ζ	6·0	1	97·19	4	8 6 28·56	+ 3·4415	− 0·0104	+ 0·0033	720

680. Orange. 716. Reddish. 720. Very close double. Observed as one mass. A third star, magnitude 6·8, follows closely and is south.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
676	99·22	3	89 34 25·7	+ 8·312	+0·405			15019	1095				+ 0 2054	676
677	97·53	3	63 58 38·8	+ 8·317	+0·483	+0·026	1109	14991				2295	+26 1633	677
678	98·19	3	65 21 43·0	+ 8·348	+0·478	+0·055	1111	15000				2296	+24 1759	678
679	00·19	3	87 21 20·4	+ 8·389	+0·411				1122	2990			+ 2 1761	679
680	98·16	5	61 43 55·8	+ 8·411	+0·490	+0·051	1112	15028			1960	2300	+28 1463	680
681	98·22	3	69 26 36·6	+ 8·418	+0·463	−0·020	1113	15050				2301	+20 1893	681
682	98·20	3	71 14 45·6	+ 8·501	+0·457	+0·044	1115	15078				2304	+18 1733	682
683	99·22	3	87 53 52·5	+ 8·588	+0·407			15135	1187	3015			+ 2 1776	683
684	97·86	3	66 36 40·7	+ 8·679	+0·469	−0·015	1119	15146				2313	+23 1812	684
685	98·49	3	85 25 1·6	+ 8·767	+0·412			15207	1241	3035			+ 4 1826	685
686	01·20	4	114 36 30·7	+ 8·876	+0·326	−0·024	1132	15300			1991	2324		686
687	99·19	3	86 28 7·5	+ 8·911	+0·407				1289	3052			+ 3 1818	687
688	99·22	3	85 17 18·4	+ 8·914	+0·410			15271		3053			+ 4 1833	688
689	00·19	3	89 40 1·2	+ 8·928	+0·398			15286					+ 0 2108	689
690	00·18	3	87 58 40·8	+ 8·988	+0·402	−0·009	1131	15321	1319	3062			+ 2 1808	690
691	99·19	3	86 27 52·5	+ 9·016	+0·406				1324	3065			+ 3 1824	691
692	96·17	3	62 58 30·8	+ 9·055	+0·475	+0·028	1128	15316				2336	+27 1499	692
693	97·21	3	69 51 6·4	+ 9·246	+0·450	+0·035	1137	15417				2345	+20 1946	693
694	98·50	3	85 14 56·7	+ 9·346	+0·405			15475		3098			+ 4 1860	694
695	98·17	3	73 56 32·0	+ 9·361	+0·436	+0·026	1138	15468				2350	+16 1590	695
696	99·19	3	88 36 20·9	+ 9·424	+0·395	0·000		15522	1473	3108			+ 1 1959	696
697	98·22	3	73 12 42·4	+ 9·477	+0·437	−0·021		15525					+16 1598	697
698	99·21	3	87 30 30·5	+ 9·504	+0·397	−0·085	1139	15556	1503	3112		2354	+ 2 1833	698
699	02·20	3	86 47 39·0	+ 9·513	+0·399			15562	1506	3115			+ 3 1860	699
700	97·88	3	64 19 59·0	+ 9·636	+0·461	−0·013	1140	15581				2360	+25 1812	700
701	98·51	3	66 8 30·9	+ 9·648	+0·455	+0·010		15590				2363	+23 1866	701
702	98·50	3	72 25 0·9	+ 9·649	+0·436	−0·010	1143	15602				2364	+17 1731	702
703	98·51	3	73 16 7·3	+ 9·707	+0·433	−0·003	1146	15630			2039	2367	+16 1612	703
704	02·20	3	84 50 41·9	+ 9·717	+0·401			15657	1581				+ 5 1857	704
705	99·19	3	86 45 42·9	+ 9·790	+0·395					3142			+ 3 1875	705
706	99·22	3	87 23 26·3	+ 9·803	+0·394	−0·123	1153	15695	1609	3143		2370	+ 2 1854	706
707	96·84	3	61 55 30·4	+ 9·827	+0·465	+0·039	1149	15676			2047	2371	+28 1532	707
708	98·54	3	67 38 55·6	+ 9·869	+0·447	−0·009	1152	15702				2374	+22 1845	708
709	01·94	19	1 4 0·4	+ 9·877	+8·316	−0·020					2006	2337	+89 13	709
710	98·22	3	67 4 42·9	+10·055	+0·445	−0·005	1157	15786				2381	+23 1887	710
711	99·19	3	87 32 58·9	+10·071	+0·389			15820	1717	3180			+ 2 1868	711
712	02·20	3	90 17 16·6	+10·081	+0·382			15832	1720		2062		− 0 1903	712
713	02·22	3	88 32 10·4	+10·107	+0·386				1726	3185			+ 1 1995	713
714	97·90	3	68 7 39·7	+10·168	+0·440	+0·059	1161	15847				2384	+22 1862	714
715	98·18	3	76 4 3·9	+10·261	+0·416	+0·019	1165	15893	1776			2388	+14 1831	715
716	02·84	3	114 0 57·5	+10·274	+0·316	−0·061	1170	15946			2074	2389		716
717	98·22	3	64 11 19·9	+10·360	+0·448	+0·351	1167	15925			2080	2393	+25 1865	717
718	98·21	3	75 4 28·0	+10·430	+0·416	−0·007		15968				2396	+15 1775	718
719	02·22	3	86 45 15·3	+10·437	+0·386			15984	46	3223			+ 3 1913	719
720	97·19	3	72 3 2·8	+10·513	+0·423	+0·104	1175	16004				2402	+18 1867	720

696. Authority for Proper Motions: Boss.
697, 718. Authority for Proper Motions: Auwers (Berlin A).
701. Authority for Proper Motions: Becker.
709. Authority for Proper Motions: Thackeray.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
721	Hydrae	7.7	2	99.15	3	8 6 33.56	+3.1637	−0.0053		721
722	Cancri	6.3	1	98.21	3	8 7 46.22	+3.5645	−0.0132		722
723	Hydrae	7.8*	...	02.20	3	8 9 29.11	+3.1015	−0.0044		723
724	17 Cancri ... ... β	3.8	...	97.99	22	8 11 5.52	+3.2607	−0.0071	−0.0044	724
725	Hydrae	7.1	3	99.16	3	8 12 2.65	+3.1615	−0.0054		725
726	Hydrae	7.6	...	02.22	3	8 12 25.65	+3.1012	−0.0045		726
727	Cancri	6.7	1	96.56	3	8 12 35.74	+3.3934	−0.0099		727
728	Cancri	6.0	...	98.16	3	8 14 31.04	+3.5014	−0.0124	+0.0041	728
729	Hydrae	6.1	...	99.96	4	8 14 34.47	+3.1556	−0.0054		729
730	19 Cancri ... ... λ	6.0	1	97.49	3	8 14 35.39	+3.5760	−0.0143	−0.0024	730
731	Hydrae	7.8*	...	99.20	3	8 16 6.18	+3.0995	−0.0046	+0.0020	731
732	Hydrae	6.9	1	00.20	4	8 16 59.66	+3.1204	−0.0049		732
733	20 Cancri ... ... d^1	5.7	...	00.25	16	8 17 38.29	+3.4450	−0.0114	−0.0053	733
734	Hydrae	7.6	2	99.17	3	8 18 37.97	+3.0800	−0.0043		734
735	25 Cancri ... ... d^2	6.2	...	97.17	3	8 20 10.25	+3.4152	−0.0109	−0.0144	735
736	Hydrae	5.9	...	99.69	4	8 20 24.04	+3.1191	−0.0050		736
737	Hydrae	6.7	...	99.20	3	8 20 37.77	+3.1090	−0.0048		737
738	24 Cancri ... ... υ^1	7.1	2	98.19	3	8 20 42.92	+3.5791	−0.0150	−0.0053	738
739	27 Cancri	5.7	1	97.53	3	8 21 12.12	+3.3243	−0.0090	−0.0026	739
740	28 Cancri ... ... υ^2	6.1	...	97.89	3	8 22 41.05	+3.5671	−0.0150	−0.0042	740
741	Hydrae	7.3	1	00.21	4	8 22 42.05	+3.1400	−0.0054		741
742	29 Cancri	5.9	...	98.21	3	8 23 2.50	+3.3541	−0.0098	−0.0028	742
743	Hydrae	7.4	1	00.21	3	8 23 6.46	+3.0836	−0.0045		743
744	Hydrae	7.6	1	00.21	4	8 23 26.12	+3.1026	−0.0048		744
745	Hydrae	7.4	2	00.20	4	8 24 39.60	+3.0842	−0.0045		745
746	Hydrae	7.2	...	99.19	3	8 24 47.54	+3.0794	−0.0044		746
747	30 Cancri ... ... υ^3	5.7	...	96.15	3	8 25 35.70	+3.5612	−0.0151	−0.0072	747
748	31 Cancri ... ... θ	5.5	...	97.89	3	8 25 53.63	+3.4310	−0.0118	−0.0051	748
749	33 Cancri ... ... η	5.6	...	00.67	15	8 26 55.55	+3.4793	−0.0131	−0.0039	749
750	32 Cancri	6.4	...	97.85	3	8 27 5.45	+3.5590	−0.0152	−0.0074	750
751	Hydrae	6.1	...	02.21	3	8 28 27.11	+3.1678	−0.0061		751
752	Hydrae	7.2	1	00.18	4	8 30 0.76	+3.0858	−0.0046		752
753	Hydrae	6.5	...	00.19	4	8 30 12.25	+3.1299	−0.0054		753
754	Cancri	6.3	...	96.54	3	8 30 31.24	+3.3695	−0.0106	−0.0003	754
755	Cancri	6.8	...	96.81	3	8 32 52.46	+3.5412	−0.0154	−0.0030	755
756	Hydrae	7.3	...	01.71	4	8 33 11.77	+3.0918	−0.0048		756
757	5 Hydrae ... ... σ	4.7	...	99.47	4	8 33 31.80	+3.1403	−0.0057	−0.0038	757
758	Cancri	6.3	1	97.54	3	8 34 6.51	+3.4512	−0.0130	−0.0040	758
759	Cancri	7.6	2	97.85	3	8 34 13.62	+3.4510	−0.0130		759
760	41 Cancri ... ... ε	6.3	...	98.23	3	8 34 42.91	+3.4505	−0.0130	−0.0060	760
761	Hydrae	7.1	2	00.78	5	8 35 6.79	+3.1141	−0.0052		761
762	43 Cancri ... ... γ	4.7	...	01.69	8	8 37 29.96	+3.4866	−0.0143	−0.0087	762
763	45 Cancri ... ... A^1	5.5	...	98.24	3	8 37 41.72	+3.3119	−0.0097	−0.0012	763
764	7 Hydrae ... ... η	4.4	...	00.19	4	8 37 59.85	+3.1405	−0.0058	−0.0029	764
765	Cancri ... ... S	Var.	2	98.55	3	8 38 13.38	+3.4356	−0.0129		765

724. Reddish-orange. 732. Orange-red. 738. Double. Brighter observed. Companion, of magnitude 8, follows north. 759. Slightly brighter than star near, B.D. + 20° 2152, which is north. 760. Brighter than No. 758. 765. 1898 April 4, mag. 8; 1899 Mar. 22, mag. 8.3. Chandler's limits are 8.2 and 9.8. This star is of the *Algol*-type.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
721	99·15	3	85 25 45·2	+10·519	+0·388			16023	78	3231			+ 4 1932	721
722	98·21	3	66 33 39·6	+10·609	+0·437			16053				2407	+23 1913	722
723	02·20	3	88 32 20·9	+10·736	+0·378			16126	163	3258			+ 1 2040	723
724	96·20	4	80 30 22·1	+10·854	+0·395	+0·041	1180	16174	201		2105	2417	+ 9 1917	724
725	99·16	3	85 28 20·1	+10·925	+0·382			16213	228	3288			+ 4 1945	725
726	02·22	3	88 32 38·8	+10·953	+0·374			16239	241	3292			+ 1 2056	726
727	96·56	3	74 0 42·0	+10·965	+0·410			16224				2422	+16 1679	727
728	98·16	3	68 56 12·0	+11·105	+0·420	+0·053		16292				2428	+21 1817	728
729	98·89	3	85 44 14·6	+11·109	+0·378			16312		3311			+ 4 1954	729
730	97·49	3	65 39 45·2	+11·111	+0·429	+0·028	1182	16288				2429	+24 1909	730
731	99·20	3	88 36 54·1	+11·221	+0·370	+0·128		16369	350	3327			+ 1 2074	731
732	99·21	3	87 31 46·6	+11·285	+0·371			16397		3335			+ 2 1948	732
733	01·20	3	71 20 47·4	+11·332	+0·410	+0·022	1185	16406			2145	2434	+18 1930	733
734	99·17	3	89 37 5·4	+11·403	+0·365			16463					+ 0 2288	734
735	97·17	3	72 37 26·7	+11·514	+0·403	+0·143	1192	16506					+17 1842	735
736	98·53	3	87 34 20·0	+11·530	+0·367			16534	466	3362			+ 2 1965	736
737	99·20	3	88 5 54·3	+11·547	+0·366			16546	475	3366			+ 2 1967	737
738	98·19	3	65 8 12·5	+11·553	+0·422	+0·080	1193	16517					+25 1920	738
739	97·53	3	77 0 54·8	+11·587	+0·391	+0·093	1196	16558	483			2448	+13 1912	739
740	97·89	3	65 31 23·0	+11·693	+0·418	+0·057	1198	16597				2452	+24 1931	740
741	99·22	3	86 27 4·7	+11·694	+0·367			16623	526	3381			+ 3 1983	741
742	98·21	3	75 27 28·0	+11·719	+0·392	+0·005	1200	16621	529		2172	2454	+14 1899	742
743	00·21	3	89 25 28·3	+11·723	+0·360			16645					+ 0 2305	743
744	00·20	3	88 25 15·5	+11·747	+0·362				547	3387			+ 1 2102	744
745	99·20	3	89 23 33·4	+11·833	+0·358			16680	577				+ 0 2312	745
746	99·19	3	89 38 47·3	+11·842	+0·357			16686	580				+ 0 2313	746
747	96·15	3	65 34 53·2	+11·899	+0·413	+0·059	1201	16685				2464	+24 1940	747
748	97·89	3	71 34 2·6	+11·920	+0·397	+0·050	1203	16716				2467	+18 1963	748
749	00·69	4	69 13 8·4	+11·993	+0·401	+0·047	1207	16760			2186	2473	+20 2109	749
750	97·85	3	65 34 28·8	+12·004	+0·411	+0·037	1205	16739				2474	+24 1946	750
751	02·21	3	84 54 5·9	+12·099	+0·363			16814	665				+ 5 1997	751
752	99·17	3	89 17 33·1	+12·208	+0·352			16881	711	3444			+ 0 2335	752
753	99·19	3	86 54 44·4	+12·221	+0·357			16886	713	3447			+ 3 2014	753
754	96·54	3	74 20 25·6	+12·243	+0·384	+0·027		16882				2481	+15 1851	754
755	96·81	3	65 57 35·4	+12·406	+0·400	+0·170		16964				2496	+24 1968	755
756	02·21	3	88 57 32·3	+12·428	+0·348			17007		3469			+ 1 2142	756
757	98·23	3	86 18 27·0	+12·451	+0·354	+0·003	1221	17020	810	3471	2216		+ 3 2026	757
758	97·54	3	70 6 23·7	+12·490	+0·388	−0·016		17024				2507	+20 2150	758
759	97·85	3	70 6 20·3	+12·498	+0·388							2510	+20 2153	759
760	98·23	3	70 6 4·5	+12·532	+0·387	−0·001	1225	17045				2516	+20 2171	760
761	99·17	3	87 43 30·8	+12·559	+0·349			17085	855	3479			+ 2 2039	761
762	02·21	3	68 10 18·1	+12·721	+0·388	+0·033	1230	17143			2232	2523	+21 1895	762
763	98·24	3	76 57 36·7	+12·734	+0·368	−0·010	1232	17166	918			2524	+13 1972	763
764	99·19	3	86 14 32·2	+12·755	+0·348	−0·005	1235	17180	929	3499	2235	2525	+ 3 2039	764
765	98·55	3	70 36 20·9	+12·770	+0·381								+19 2090	765

728. Authority for Proper Motions: Becker. 731, 755. Authority for Proper Motions: Porter.
754, 758. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis).

No.	Constellation.		Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
							h. m. s.	s.	s.	s.	
766	Hydrae	... ...	6·3	...	98·54	3	8 38 44·43	+3·1572	−0·0062		766
767	47 Cancri	... ... δ	4·1	...	96·94	3	8 39 0·15	+3·4171	−0·0125	−0·0026	767
768	Hydrae	... ...	7·8*	...	00·16	3	8 39 4·06	+3·0037	−0·0032		768
769	Hydrae	... ...	7·0	2	00·20	4	8 40 15·45	+3·0827	−0·0047		769
770	Hydrae	... ...	6·5	...	02·21	3	8 40 18·62	+3·1628	−0·0063		770
771	Hydrae	... ...	7·5	2	00·18	4	8 41 11·31	+3·0907	−0·0049		771
772	50 Cancri	... ... A^2	6·0	1	97·21	3	8 41 27·15	+3·2981	−0·0095	−0·0063	772
773	11 Hydrae	... ... ε	3·5	1	98·81	11	8 41 28·81	+3·1939	−0·0071	−0·0135	773
774	Hydrae	... ...	7·1	...	00·20	4	8 43 20·67	+3·1246	−0·0056		774
775	Hydrae	... ...	7·4	1	99·71	4	8 44 26·75	+3·1053	−0·0052		775
776	Cancri	... ...	6·1	...	97·54	3	8 45 3·55	+3·4227	−0·0131	−0·0038	776
777	Cancri	... ...	6·5	...	96·21	3	8 49 44·90	+3·3859	−0·0124	−0·0012	777
778	60 Cancri	... ...	5·7	1	97·53	3	8 50 27·98	+3·2820	−0·0096	−0·0019	778
779	Hydrae	... ...	6·6	3	00·20	5	8 51 22·18	+3·1519	−0·0063		779
780	Hydrae	... ...	8·0*	...	02·21	3	8 51 37·21	+3·0860	−0·0049		780
781	62 Cancri	... ... o^1	5·1	...	98·19	3	8 51 40·30	+3·3480	−0·0115	+0·0029	781
782	63 Cancri	... ... o^2	5·7	...	97·53	3	8 52 0·15	+3·3524	−0·0116	+0·0031	782
783	Hydrae	... ...	6·8	...	02·23	3	8 52 2·00	+3·1223	−0·0057		783
784	Hydrae	... ...	7·1	2	99·19	3	8 52 58·19	+3·1055	−0·0053		784
785	65 Cancri	... ... α	4·3	...	98·83	16	8 53 1·09	+3·2840	−0·0097	+0·0010	785
786	Hydrae	... ...	7·0	...	02·20	3	8 56 46·68	+3·1240	−0·0058		786
787	Hydrae	... ...	5·9	...	02·46	4	8 56 51·43	+3·0712	−0·0046	−0·0040	787
788	Hydrae	... ...	6·9	2	00·23	5	8 57 25·13	+3·2018	−0·0077		788
789	Hydrae	... ...	7·6	3	99·70	4	8 59 26·47	+3·1380	−0·0061		789
790	Hydrae	... ...	7·5	1	02·20	3	9 0 3·99	+3·1192	−0·0057		790
791	Cancri	... ...	6·3	1	97·57	3	9 1 41·06	+3·4784	−0·0164	−0·0150	791
792	Hydrae	... ...	6·7	2	00·22	5	9 1 49·92	+3·1032	−0·0053		792
793	Hydrae	... ...	6·6	...	98·90	3	9 2 4·71	+3·1215	−0·0058		793
794	76 Cancri	... ... κ	5·4	2	97·96	12	9 2 19·85	+3·2558	−0·0094	−0·0028	794
795	77 Cancri	... ... ξ	5·2	...	97·86	3	9 3 36·69	+3·4571	−0·0159	−0·0011	795
796	Hydrae	... ...	7·7	4	99·22	3	9 4 18·78	+3·1270	−0·0059		796
797	Hydrae	... ...	5·9	...	95·16	3	9 4 23·69	+2·8765	−0·0005		797
798	79 Cancri	... ...	6·1	...	98·21	4	9 4 36·23	+3·4545	−0·0159	−0·0004	798
799	Hydrae	... ...	7·3	1	99·83	5	9 6 20·99	+3·0839	−0·0049		799
800	Hydrae	... ...	7·0	3	00·20	4	9 6 59·37	+3·1412	−0·0063		800
801	Cancri	... ...	6·1	...	98·19	3	9 7 54·62	+3·4356	−0·0155	−0·0019	801
802	Hydrae	... ...	7·4	3	99·20	3	9 8 11·25	+3·1402	−0·0063		802
803	22 Hydrae	... ... θ	3·9	...	00·88	6	9 9 9·65	+3·1161	−0·0057	+0·0078	803
804	Hydrae	... ...	8·0*	...	02·20	3	9 9 39·75	+3·1496	−0·0066		804
805	82 Cancri	... ... π^2	5·6	...	97·57	3	9 9 42·58	+3·3211	−0·0117	−0·0029	805
806	Hydrae	... ...	7·1	2	99·21	3	9 11 31·76	+3·0907	−0·0050		806
807	Hydrae	... ...	7·3	1	01·72	4	9 12 1·87	+3·1094	−0·0055		807
808	Hydrae	... ...	7·4	3	00·98	4	9 12 24·28	+3·0879	−0·0050		808
809	83 Cancri	... ...	6·6	...	98·49	18	9 13 24·03	+3·3636	−0·0134	−0·0090	809
810	Hydrae	... ...	7·1	3	00·43	5	9 15 28·65	+3·0820	−0·0048		810

767. Reddish. 777. Red. 791. Double. Brighter observed. Companion, of magnitude 6·7, precedes south.
792. Orange-yellow. 804. The Declination of this star in W.B. (1) is 10′ too great.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
766	98·54	3	85 18 17·0	+12·805	+0·349			17206	947	3504			+ 4 2029	766
767	96·94	3	71 28 41·0	+12·822	+0·378	+0·226	1236	17199				2526	+18 2027	767
768	00·16	3	93 50 28·7	+12·827	+0·331				961		2238		− 3 2454	768
769	99·20	3	89 26 19·5	+12·907	+0·339			17258	982				+ 0 2379	769
770	02·21	3	84 58 12·1	+12·910	+0·347			17255	981				+ 5 2049	770
771	99·18	3	88 59 15·6	+12·969	+0·338			17286	1005	3522			+ 1 2163	771
772	97·21	3	77 31 22·6	+12·986	+0·361	+0·034	1242	17279			2250		+12 1904	772
773	98·20	3	83 12 51·6	+12·988	+0·349	+0·023	1243	17290	1008		2251	2537	+ 6 2036	773
774	99·21	3	87 3 59·6	+13·112	+0·339			17357	1061	3541			+ 3 2057	774
775	98·55	3	88 8 48·0	+13·185	+0·336			17393	1086	3550			+ 2 2072	775
776	97·54	3	70 47 41·0	+13·225	+0·370	−0·011		17400				2559	+19 2110	776
777	96·21	3	72 23 17·5	+13·531	+0·359	−0·010		17576				2577	+17 1973	777
778	97·53	3	77 59 29·9	+13·577	+0·346	+0·005	1262	17609	1238				+12 1941	778
779	98·21	3	85 22 48·4	+13·635	+0·331			17642	1263	3603			+ 4 2081	779
780	02·21	3	89 13 34·5	+13·651	+0·324				1270	3605			+ 0 2430	780
781	98·19	3	74 17 36·9	+13·654	+0·352	−0·033	1265	17640				2584	+15 1945	781
782	97·53	3	74 2 4·4	+13·676	+0·352	−0·036	1266	17651				2586	+16 1864	782
783	02·23	3	87 5 25·1	+13·678	+0·327			17663	1280	3608			+ 3 2099	783
784	99·19	3	88 4 20·0	+13·737	+0·324			17701	1309	3617			+ 2 2112	784
785	99·57	3	77 45 17·2	+13·741	+0·342	+0·022	1269	17693	1300		2303	2590	+12 1948	785
786	02·20	3	86 56 9·3	+13·978	+0·321			17832	1401	3641			+ 3 2124	786
787	02·22	3	90 5 30·1	+13·983	+0·315	−0·090		17835	1406		2323	2608	+ 0 2449	787
788	98·25	3	82 18 28·1	+14·019	+0·328			17845	1414				+ 7 2066	788
789	98·53	3	86 3 41·9	+14·145	+0·318			17909	1455	3655			+ 4 2115	789
790	02·20	3	87 11 14·3	+14·183	+0·315				1474	3662			+ 2 2138	790
791	97·57	3	66 37 3·0	+14·283	+0·350	−0·040		17954				2626	+23 2048	791
792	00·21	5	88 8 7·7	+14·292	+0·311			17988	1508	3670			+ 2 2145	792
793	98·90	3	87 1 1·5	+14·307	+0·313			17993	1511	3671			+ 3 2144	793
794	98·22	4	78 55 45·1	+14·323	+0·326	−0·009	1287	17995	1515		2338	2627	+11 1984	794
795	97·86	3	67 32 59·6	+14·401	+0·345	−0·025	1289	18022				2629	+22 2061	795
796	00·80	5	86 39 8·1	+14·443	+0·310			18065	15	3680			+ 3 2154	796
797	95·16	3	101 57 9·0	+14·448	+0·285			18083	28		2348		−11 2565	797
798	98·21	4	67 35 49·9	+14·461	+0·343	−0·018	1291	18055				2634	+22 2063	798
799	97·59	3	89 17 57·4	+14·566	+0·303			18134	65	3685			+ 0 2477	799
800	99·20	3	85 43 22·8	+14·605	+0·308			18150	73	3692			+ 4 2139	800
801	98·19	3	68 18 16·6	+14·660	+0·335	+0·016	1299	18163			2369	2644	+21 1991	801
802	99·20	3	85 45 48·1	+14·677	+0·306			18196	102	3702			+ 4 2144	802
803	98·57	3	87 15 49·0	+14·734	+0·302	+0·309	1303	18219	129	3711	2370	2647	+ 2 2167	803
804	02·20	3	85 8 36·4	+14·764	+0·304			18233	134	3713			+ 5 2143	804
805	97·57	3	74 38 36·9	+14·767	+0·321	−0·020	1304	18228				2648	+15 2009	805
806	99·21	3	88 51 11·1	+14·874	+0·296			18302	175	3723			+ 1 2267	806
807	02·22	3	87 39 7·8	+14·904	+0·297				188	3726			+ 2 2173	807
808	00·24	3	89 1 32·5	+14·925	+0·294			18328	199	3728			+ 1 2271	808
809	98·89	3	71 52 13·6	+14·983	+0·320	+0·139	1309	18342			2386	2656	+18 2165	809
810	98·59	3	89 23 39·2	+15·104	+0·289			18418	268				+ 0 2499	810

776, 777. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 787. The Proper Motions have been specially computed for the present catalogue. 791. Authority for Proper Motions: Becker.

No.	Constellation.		Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
							h. m. s.	s.	s.	s.	
811	Hydrae	...	7·6	2	97·59	3	9 15 57·37	+3·1243	−0·0059		811
812	Hydrae	...	8·7	1	00·19	4	9 18 2·21	+3·1324	−0·0062		812
813	Hydrae	...	7·6	1	00·79	5	9 18 3·30	+3·1323	−0·0062	−0·0066	813
814	Hydrae	...	7·5	3	99·21	3	9 18 27·39	+3·1157	−0·0057		814
815	Hydrae	...	8·0*	...	02·21	3	9 20 8·60	+3·1436	−0·0065		815
816	30 Hydrae	α	2·3	...	98·69	29	9 22 40·34	+2·9502	−0·0014	−0·0019	816
817	2 Leonis	ω	5·5	...	96·90	3	9 23 6·14	+3·2141	−0·0088	+0·0024	817
818	3 Leonis	...	5·9	...	98·20	3	9 23 9·64	+3·2009	−0·0083	−0·0043	818
819	Hydrae	...	7·6	4	99·71	4	9 25 54·78	+3·1239	−0·0059		819
820	Hydrae	...	7·0	...	02·21	3	9 26 21·60	+3·1004	−0·0052		820
821	5 Leonis	ξ	5·0	...	99·60	10	9 26 33·38	+3·2452	−0·0099	−0·0076	821
822	6 Leonis	h	5·2	...	97·19	3	9 26 35·94	+3·2213	−0·0091	−0·0005	822
823	Hydrae	...	6·9	4	99·21	3	9 27 31·23	+3·1060	−0·0054		823
824	Leonis	...	6·7	...	96·94	3	9 29 34·13	+3·2626	−0·0107	−0·0010	824
825	Hydrae	...	8·0	1	02·46	4	9 30 40·99	+3·0819	−0·0046		825
826	8 Leonis	...	5·9	...	98·24	3	9 31 31·64	+3·3176	−0·0128	−0·0025	826
827	Hydrae	...	6·5	...	95·26	3	9 32 3·44	+2·7103	+0·0040		827
828	Hydrae	...	7·3	4	99·22	4	9 32 31·29	+3·1028	−0·0053	−0·0084	828
829	2 Sextantis	...	5·5	1	01·73	4	9 33 14·25	+3·1440	−0·0066	−0·0120	829
830	Leonis	...	6·7	...	96·22	3	9 33 18·06	+3·3752	−0·0153		830
831	Sextantis	...	7·3	2	99·20	3	9 34 27·64	+3·1233	−0·0059		831
832	14 Leonis	ο	3·7	...	97·59	8	9 35 48·81	+3·2164	−0·0092	−0·0104	832
833	Leonis	...	8·7	1	99·92	3	9 36 38·96	+3·3921	−0·0163	−0·0180	833
834	Hydrae	...	7·2	1	02·47	4	9 37 16·18	+3·0751	−0·0043		834
835	Leonis	...	7·6	...	97·59	3	9 37 46·64	+3·3657	−0·0153		835
836	16 Leonis	ψ	5·6	...	98·27	3	9 38 17·15	+3·2729	−0·0114	−0·0009	836
837	Leonis	...	6·6	1	97·91	3	9 38 56·44	+3·3434	−0·0144	−0·0005	837
838	17 Leonis	ε	3·1	...	97·75	9	9 40 10·56	+3·4175	−0·0179	−0·0043	838
839	Sextantis	...	6·0	...	96·25	3	9 40 53·55	+3·1686	−0·0075		839
840	18 Leonis	...	5·8	...	98·21	3	9 41 0·10	+3·2384	−0·0102	−0·0016	840
841	Sextantis	...	6·3	2	97·90	3	9 41 14·00	+3·1026	−0·0052		841
842	Leonis	...	8·9	2	98·57	3	9 41 53·17	+3·2323	−0·0100		842
843	Leonis	R	Var.	2	98·90	3	9 42 10·77	+3·2320	−0·0100	−0·0021	843
844	Sextantis	...	7·7	2	98·59	3	9 45 5·64	+3·0801	−0·0044		844
845	4 Sextantis	...	6·2	...	98·24	3	9 45 17·83	+3·1351	−0·0063	−0·0094	845
846	23 Leonis	...	6·7	...	96·25	3	9 45 37·30	+3·2508	−0·0108	+0·0023	846
847	7 Sextantis	...	5·8	...	98·57	3	9 47 2·67	+3·1101	−0·0054	−0·0140	847
848	Sextantis	...	7·1	1	99·25	3	9 47 4·43	+3·0797	−0·0043		848
849	24 Leonis	μ	4·1	...	97·59	16	9 47 4·62	+3·4376	−0·0196	−0·0185	849
850	Sextantis	...	6·3	...	96·24	3	9 48 27·85	+3·1545	−0·0070		850
851	Sextantis	...	7·7	...	01·24	4	9 49 25·68	+3·0906	−0·0047		851
852	Leonis	...	6·0	...	96·27	3	9 51 7·89	+3·1908	−0·0085	−0·0077	852
853	Sextantis	...	7·3	2	99·26	4	9 51 37·01	+3·1314	−0·0061	−0·0139	853
854	Sextantis	...	8·2*	...	02·23	3	9 52 17·23	+3·0773	−0·0041		854
855	Antliae	...	6·2	...	95·28	6	9 52 23·13	+2·7127	+0·0061		855

816. Orange-red. 820. Double. Companion follows south. 829. Orange. 831. Slightly fainter than No. 828. 835. B.D. magnitude, 6·5; Berlin (B), 7·1. 843. 1898 April 4, mag. 8·7; 1899 March 15, very red, mag. 9·0. The limits are 5·2 and 10·0; the period is 313 days. 849. Yellow. 850. Reddish.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
811	97.59	3	86 38 4.1	+15.131	+0.292			18430	273	3747			+ 3 2193	811
812	99.20	3	86 4 3.9	+15.250	+0.290			18483	323	3757			+ 4 2178	812
813	99.20	3	86 4 17.3	+15.251	+0.290	−0.019		18486	324	3758			+ 4 2178	813
814	99.21	3	87 9 41.9	+15.274	+0.288			18505	334	3760			+ 3 2196	814
815	02.21	3	85 17 0.1	+15.369	+0.288			18561	371	3771			+ 4 2185	815
816	97.05	5	98 13 30.0	+15.510	+0.266	−0.052	1330	18618	432		2429	2683	− 8 2680	816
817	96.90	3	80 30 27.3	+15.534	+0.290	−0.018	1328	18619	438				+ 9 2188	817
818	98.20	3	81 22 30.7	+15.537	+0.288	−0.002	1329	18632	441			2684	+ 8 2226	818
819	98.55	3	86 28 51.1	+15.688	+0.277			18707	501	3799			+ 3 2221	819
820	02.21	3	88 5 37.4	+15.713	+0.274			18726	511	3803			+ 2 2215	820
821	99.22	3	78 15 25.8	+15.723	+0.287	+0.060	1338		515		2451	2699	+11 2053	821
822	97.19	3	79 50 35.1	+15.726	+0.285	−0.009	1339	18728	517		2454		+10 2014	822
823	99.21	3	87 41 35.2	+15.776	+0.273			18764	549	3805			+ 2 2217	823
824	96.94	3	76 53 58.8	+15.885	+0.284	+0.020		18823				2707	+13 2117	824
825	02.21	3	89 21 9.2	+15.945	+0.266			18866	626	3822			+ 0 2533	825
826	98.24	3	73 6 49.5	+15.990	+0.285	+0.002	1347	18877			2474	2710	+17 2109	826
827	95.26	3	114 15 22.0	+16.017	+0.231						2476	2712		827
828	99.89	3	87 51 19.3	+16.042	+0.265	−0.037		18919	666	3831			+ 2 2229	828
829	02.24	3	84 53 55.6	+16.079	+0.267	+0.033	1352	18940	683				+ 5 2207	829
830	96.22	3	69 15 4.9	+16.083	+0.287			18925				2715	+20 2351	830
831	99.20	3	86 21 8.9	+16.143	+0.263			18974	708	3837			+ 3 2249	831
832	96.93	3	79 39 9.6	+16.213	+0.269	+0.018	1360	19007	732		2491	2728	+10 2044	832
833	97.95	3	67 48 19.0	+16.256	+0.283	+0.360							+22 2118	833
834	02.22	3	89 49 25.7	+16.287	+0.255			19065	764				+ 0 2546	834
835	97.59	3	69 20 58.3	+16.314	+0.278			19067					+20 2366	835
836	98.27	3	75 31 13.6	+16.339	+0.270	+0.002	1366	19081	783		2500	2737	+14 2136	836
837	97.91	3	70 40 34.4	+16.372	+0.274	+0.067		19096				2738	+19 2251	837
838	97.42	3	65 45 54.1	+16.435	+0.278	+0.008	1368	19123			2505	2741	+24 2129	838
839	96.25	3	82 49 47.6	+16.471	+0.257								+ 7 2181	839
840	98.21	3	77 43 44.8	+16.476	+0.262	−0.029	1370	19157	838			2744	+12 2090	840
841	97.90	3	87 45 7.0	+16.487	+0.250			19175	847	3869			+ 2 2246	841
842	98.57	3	78 6 32.2	+16.520	+0.260							2746	+12 2093	842
843	98.90	3	78 6 25.8	+16.535	+0.260	+0.020	1373	19197				2748	+12 2096	843
844	98.59	3	89 25 47.0	+16.678	+0.242			19286	934				+ 0 2566	844
845	98.24	3	85 11 15.9	+16.687	+0.246	+0.028	1380	19290	930	3882			+ 5 2240	845
846	96.25	3	76 27 58.2	+16.703	+0.255	+0.004	1381	19293	937			2753	+13 2164	846
847	98.57	3	87 4 45.2	+16.772	+0.241	−0.129	1386	19340		3893			+ 3 2280	847
848	99.25	3	89 27 16.3	+16.773	+0.239			19343	970				+ 0 2573	848
849	97.51	6	63 31 18.8	+16.773	+0.267	+0.045	1384	19322			2537	2758	+26 2019	849
850	96.24	3	83 34 14.1	+16.839	+0.243			19376	996				+ 6 2224	850
851	02.23	3	88 34 55.6	+16.885	+0.236			19394	1015	3903			+ 1 2381	851
852	96.27	3	80 35 34.5	+16.965	+0.241	−0.028	1393	19440	1047		2553	2773	+ 9 2262	852
853	97.95	3	85 16 52.8	+16.987	+0.235	+0.047		19473	1057	3911			+ 4 2269	853
854	02.23	3	89 37 36.1	+17.018	+0.230				1076				+ 0 2590	854
855	95.28	3	117 0 0.6	+17.023	+0.202							2779		855

813, 828. Authority for Proper Motions: Boss. 824. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 833. The Proper Motions have been specially computed for the present catalogue. 837. Authority for Proper Motions: Auwers (Berlin A). 853. Authority for Proper Motions: Porter.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
856	Leonis	6·2	...	96·27	3	9 52 49·79	+3·1816	−0·0082	−0·0003	856
857	27 Leonis ... ... ν	5·1	...	97·20	3	9 52 50·59	+3·2343	−0·0104	−0·0034	857
858	12 Sextantis	7·2	3	98·56	3	9 54 31·84	+3·1197	−0·0057	−0·0060	858
859	29 Leonis ... ... π	5·0	...	99·25	17	9 54 55·74	+3·1767	−0·0080	−0·0040	859
860	Sextantis	7·5	1	98·60	3	9 58 26·64	+3·1254	−0·0059		860
861	13 Sextantis	7·0	1	98·26	3	9 58 57·59	+3·1162	−0·0055	−0·0059	861
862	30 Leonis ... ... η	3·6	...	95·54	12	10 1 52·87	+3·2773	−0·0129	−0·0013	862
863	Sextantis	7·2	1	97·58	3	10 2 24·79	+3·0888	−0·0043		863
864	31 Leonis ... ... A	4·6	...	96·20	3	10 2 35·87	+3·1940	−0·0089	−0·0082	864
865	15 Sextantis	5·0	1	99·73	4	10 2 49·19	+3·0741	−0·0037	−0·0030	865
866	32 Leonis ... ... α	1·4	...	98·65	9	10 3 2·80	+3·2170	−0·0100	−0·0182	866
867	Sextantis	6·6	...	02·25	3	10 3 32·20	+3·0915	−0·0044		867
868	Sextantis	7·7	3	97·95	3	10 4 14·52	+3·1051	−0·0050	−0·0154	868
869	19 Sextantis	5·9	...	98·01	4	10 7 36·11	+3·1290	−0·0060	−0·0063	869
870	Sextantis	7·7	2	97·55	3	10 8 2·94	+3·1119	−0·0052		870
871	Hydrae	6·2	...	95·28	6	10 8 43·39	+2·7612	+0·0072		871
872	37 Leonis	5·5	...	96·22	3	10 11 18·64	+3·2275	−0·0109	−0·0033	872
873	41 Leonis ... ... γ^1	2·5	...	97·16	17	10 14 27·55	+3·2930	−0·0147	+0·0208	873
874	41 Leonis ... ... γ^2	3·7	...	99·98	4	10 14 27·81	+3·2930	−0·0147	+0·0208	874
875	Sextantis	8·0*	...	02·23	3	10 14 31·61	+3·0757	−0·0034		875
876	23 Sextantis	6·3	...	97·88	3	10 15 52·18	+3·1013	−0·0046	−0·0017	876
877	Sextantis	8·0*	...	02·23	3	10 16 15·14	+3·0756	−0·0033		877
878	42 Leonis	6·1	...	96·28	3	10 16 27·64	+3·2344	−0·0115	−0·0051	878
879	43 Leonis	6·3	...	96·28	3	10 17 46·49	+3·1441	−0·0067	−0·0028	879
880	Sextantis	6·3	1	97·96	3	10 19 2·98	+3·1013	−0·0045		880
881	Sextantis	6·5	1	99·25	3	10 19 15·58	+3·1015	−0·0045		881
882	44 Leonis	5·9	...	98·24	3	10 19 58·97	+3·1652	−0·0078	+0·0001	882
883	Sextantis	6·8	...	01·26	3	10 20 48·51	+3·1064	−0·0047		883
884	Sextantis	6·6	...	01·85	5	10 20 57·81	+3·1162	−0·0052		884
885	42 Hydrae ... ... μ	4·1	...	97·87	8	10 21 15·18	+2·9092	+0·0041	−0·0098	885
886	Sextantis	7·5	1	98·92	3	10 22 20·09	+3·1121	−0·0050	−0·0099	886
887	45 Leonis	5·9	...	96·24	3	10 22 22·04	+3·1728	−0·0083	−0·0011	887
888	Antliae ... ... α	4·5	...	95·30	6	10 22 34·48	+2·7472	+0·0098	−0·0087	888
889	Sextantis	7·7*	...	01·75	4	10 23 48·39	+3·1028	−0·0045		889
890	Sextantis	7·2	1	00·22	3	10 24 34·28	+3·0917	−0·0039	−0·0100	890
891	30 Sextantis	5·0	...	01·79	4	10 25 10·74	+3·0716	−0·0028	−0·0032	891
892	31 Sextantis	7·1	...	00·25	3	10 25 20·99	+3·0977	−0·0042	+0·0019	892
893	Sextantis	7·0	2	99·26	4	10 26 26·32	+3·1039	−0·0045		893
894	46 Leonis ... ... ι	5·8	...	96·27	3	10 26 51·47	+3·2109	−0·0107	−0·0040	894
895	47 Leonis ... ... ρ	3·8	...	96·78	15	10 27 32·74	+3·1636	−0·0079	−0·0012	895
896	48 Leonis	5·2	...	98·25	3	10 29 35·00	+3·1401	−0·0065	−0·0086	896
897	49 Leonis	5·7	...	96·28	3	10 29 47·31	+3·1555	−0·0074	−0·0043	897
898	Sextantis	7·0	3	99·97	4	10 29 56·72	+3·0971	−0·0040		898
899	Sextantis	7·5	2	99·25	3	10 30 51·83	+3·1016	−0·0043		899
900	Hydrae	5·0	...	95·30	6	10 32 32·12	+2·8202	+0·0093		900

859. Orange-red. 868. A star (Albany 3971), magnitude 8·3, follows 14ˢ, and is just over 1′ south. 870. Some fainter stars in the field, preceding. 885. Reddish-yellow. 887. B.D. magnitude, 7·0. 891. The R.A. of this star in W.B. (1) is 10ˢ too great. 896. B.D. magnitude, 6·3.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
856	96·27	3	81 12 30·9	+17·044	+0·237	+0·015	1396	19511	1086		2559	2780	+ 9 2269	856
857	97·20	3	77 4 41·3	+17·045	+0·241	+0·004	1395	19508				2781	+13 2183	857
858	98·56	3	86 8 14·0	+17·122	+0·229	−0·039		19542	1120	3928		2784	+ 4 2276	858
859	98·28	4	81 28 33·5	+17·140	+0·233	+0·011	1398	19549	1127		2567	2787	+ 8 2301	859
860	98·60	3	85 32 43·2	+17·297	+0·223			19642	1208	3945			+ 4 2283	860
861	98·26	3	86 18 43·8	+17·320	+0·221	+0·086	1400	19659	1222	3948		2798	+ 3 2311	861
862	95·76	6	72 44 58·3	+17·447	+0·228	−0·002	1403	19729			2596	2814	+17 2171	862
863	97·58	3	88 35 35·7	+17·470	+0·214			19743	1289	3961			+ 1 2403	863
864	96·20	3	79 30 44·1	+17·478	+0·221	+0·038	1405	19744	1290			2818	+10 2112	864
865	99·73	4	89 52 57·4	+17·488	+0·212	−0·024	1407	19753	1298		2605	2819	+ 0 2615	865
866	99·41	3	77 32 38·1	+17·497	+0·222	−0·018	1406	19752	1299		2607	2820	+12 2149	866
867	02·25	3	88 21 0·7	+17·518	+0·212				1314	3967			+ 1 2406	867
868	97·95	3	87 8 17·8	+17·548	+0·212	+0·035		19782	6	3969			+ 3 2321	868
869	96·28	3	84 53 28·0	+17·689	+0·207	−0·019	1417	19861	69			2830	+ 5 2301	869
870	97·55	3	86 25 54·4	+17·707	+0·205			19874	78	3987			+ 3 2334	870
871	95·27	3	116 32 5·1	+17·735	+0·180							2832		871
872	96·22	3	75 46 21·9	+17·839	+0·207	+0·025	1426	19946	138			2844	+14 2228	872
873	97·18	8	69 39 9·1	+17·963	+0·206	+0·136	1432	20023			2663	2857	+20 2467	873
874	99·55	3	69 39 10·8	+17·963	+0·206	+0·136	1432	20023				2858	+20 2467	874
875	02·23	3	89 42 27·8	+17·966	+0·192			20038	203				+ 0 2641	875
876	97·88	3	87 12 25·1	+18·018	+0·191	−0·018	1435	20077	225	4012			+ 3 2352	876
877	02·23	3	89 43 0·5	+18·032	+0·188			20088	230				+ 0 2642	877
878	96·28	3	74 31 12·0	+18·041	+0·198	+0·022	1436	20087				2864	+15 2192	878
879	96·28	3	82 56 58·3	+18·090	+0·190	+0·091	1441	20131	256		2686		+ 7 2289	879
880	97·96	3	87 7 29·7	+18·138	+0·185			20170		4027			+ 3 2358	880
881	99·25	3	87 5 57·9	+18·146	+0·185			20171		4029			+ 3 2361	881
882	98·24	3	80 42 24·0	+18·173	+0·187	+0·020		20191	295			2869	+ 9 2351	882
883	01·26	3	86 33 45·4	+18·203	+0·182			20216	313	4034			+ 3 2365	883
884	00·95	3	85 33 32·5	+18·209	+0·183			20224	315	4036			+ 4 2328	884
885	98·23	3	106 19 32·9	+18·219	+0·169	+0·061	1451	20257			2701	2872	−16 3052	885
886	98·92	3	85 55 33·9	+18·259	+0·180	+0·015		20278	346	4045			+ 4 2333	886
887	96·24	3	79 43 39·7	+18·260	+0·183	−0·015	1453	20271	344			2881	+10 2152	887
888	95·29	4	120 33 30·6	+18·267	+0·157	+0·001					2707	2882		888
889	01·28	3	86 50 26·0	+18·312	+0·177			20323	374	4052			+ 3 2371	889
890	00·22	3	87 59 37·3	+18·339	+0·174	+0·150		20351	392	4057			+ 2 2323	890
891	02·28	3	90 7 26·4	+18·360	+0·172	+0·011	1459	20358	405		2720	2891	+ 0 2663	891
892	00·25	3	87 20 10·0	+18·366	+0·174	+0·019	1460	20367	404	4061			+ 2 2325	892
893	97·94	3	86 38 27·8	+18·404	+0·172			20388	421	4063			+ 3 2379	893
894	96·27	3	75 20 58·0	+18·419	+0·177	−0·024	1463	20400	424			2899	+14 2255	894
895	95·63	3	80 10 43·2	+18·443	+0·173	−0·011	1467	20421	438		2730	2901	+10 2166	895
896	98·25	3	82 31 52·1	+18·512	+0·168	−0·067	1468	20473	476		2738		+ 7 2330	896
897	96·28	3	80 49 58·5	+18·518	+0·169	−0·007	1469	20478	482			2906	+ 9 2374	897
898	98·90	3	87 16 43·5	+18·524	+0·165			20484	489	4077			+ 2 2334	898
899	99·25	3	86 44 6·9	+18·555	+0·164			20506	504	4079			+ 3 2394	899
900	95·31	4	116 53 39·6	+18·609	+0·145						2755			900

858. Authority for Proper Motions: Auwers (Astronomische Nachrichten, 3511). 862. The sign of the Proper Motion in R.A. has been adopted on the authority of Auwers (Astronomische Nachrichten, 3508, p. 55). 868. The Proper Motion adopted is the mean of Bossert and Porter. 882. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 886. Authority for Proper Motions: Boss. 888. Authority for Proper Motions: Auwers (Catalog der Fundamental-Sterne). 890. Authority for Proper Motions: Porter.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
901	50 Leonis	6·7	...	96·22	3	10 33 32·75	+3·2200	−0·0117	+0·0019	901
902	Sextantis	7·5	1	02·49	4	10 36 3·41	+3·0748	−0·0026		902
903	Sextantis	7·6	...	98·60	3	10 37 13·65	+3·0842	−0·0031		903
904	34 Sextantis	6·9	4	99·54	10	10 37 27·61	+3·1065	−0·0045	−0·0090	904
905	35 Sextantis	6·1	...	96·28	3	10 38 9·41	+3·1158	−0·0050	0·0000	905
906	Sextantis	7·3	1	99·99	4	10 39 51·48	+3·1034	−0·0042		906
907	36 Sextantis	6·6	...	96·96	3	10 40 0·27	+3·0968	−0·0038	−0·0053	907
908	37 Sextantis	6·3	...	98·26	3	10 40 53·23	+3·1275	−0·0058	−0·0029	908
909	Leonis	6·8	...	98·28	3	10 41 1·77	+3·1793	−0·0094		909
910	52 Leonis ... ... k	5·6	...	97·65	3	10 41 7·47	+3·1913	−0·0102	−0·0109	910
911	53 Leonis l	5·3	...	97·69	19	10 44 0·07	+3·1579	−0·0080	−0·0015	911
912	Leonis	7·5	2	98·30	3	10 45 46·92	+3·1034	−0·0041		912
913	Leonis	7·0	1	97·64	3	10 47 5·40	+3·0841	−0·0028		913
914	Leonis	7·0	1	99·23	3	10 47 28·70	+3·0751	−0·0021		914
915	Leonis	7·3	4	00·01	4	10 47 36·14	+3·0919	−0·0033		915
916	55 Leonis	6·3	4	97·97	4	10 50 33·72	+3·0816	−0·0024	+0·0057	916
917	56 Leonis	6·1	...	96·28	3	10 50 49·96	+3·1195	−0·0053	−0·0018	917
918	57 Leonis	6·9	2	98·27	3	10 51 2·71	+3·0794	−0·0023	+0·0005	918
919	Leonis	7·3	1	01·79	4	10 52 1·32	+3·0742	−0·0019		919
920	Leonis	7·9	3	02·30	3	10 53 39·30	+3·0878	−0·0028		920
921	58 Leonis ... ... d	5·4	2	98·23	17	10 55 23·76	+3·0997	−0·0037	−0·0018	921
922	59 Leonis c	5·1	...	96·22	3	10 55 33·76	+3·1159	−0·0050	−0·0057	922
923	Leonis	6·9	2	99·51	4	10 58 7·61	+3·0714	−0·0013	0·0000	923
924	62 Leonis ... ... p^2	6·1	...	96·95	3	10 58 29·49	+3·0761	−0·0017	−0·0071	924
925	Leonis	7·7	2	99·93	3	10 58 49·45	+3·0985	−0·0036	−0·0033	925
926	Leonis	6·7	...	98·26	3	10 59 18·27	+3·1548	−0·0085		926
927	63 Leonis ... ... χ	4·6	...	98·70	12	10 59 51·51	+3·1207	−0·0055	−0·0255	927
928	Hydrae ... ... χ^1	5·0	...	95·31	5	11 0 30·82	+2·8998	+0·0117	−0·0173	928
929	Leonis	7·3	2	97·97	3	11 0 54·10	+3·0831	−0·0022		929
930	65 Leonis ... ... p^3	5·9	2	96·27	3	11 1 48·17	+3·0874	−0·0025	−0·0287	930
931	69 Leonis ... ... p^5	6·1	1	97·23	4	11 8 38·40	+3·0752	−0·0012	−0·0028	931
932	Leonis	7·1	3	97·30	3	11 8 44·98	+3·0873	−0·0024		932
933	68 Leonis ... ... δ	2·5	...	97·27	19	11 8 47·42	+3·1869	−0·0130	+0·0102	933
934	Leonis	5·8	...	96·28	3	11 8 50·05	+3·1175	−0·0055		934
935	75 Leonis	6·0	1	98·03	4	11 12 8·58	+3·0851	−0·0021	+0·0023	935
936	76 Leonis	7·0	1	96·62	3	11 13 47·00	+3·0830	−0·0018	−0·0051	936
937	12 Crateris ... ... δ	3·7	...	98·29	8	11 14 20·36	+3·0056	+0·0065	−0·0106	937
938	Leonis	8·0	1	02·30	3	11 14 35·51	+3·0919	−0·0028		938
939	Hydrae	6·7	...	96·71	5	11 15 26·37	+2·9366	+0·0136	−0·0200	939
940	77 Leonis ... ... σ	4·2	...	96·98	3	11 15 58·79	+3·1021	−0·0040	−0·0071	940
941	Leonis	6·6	...	98·30	3	11 16 18·45	+3·1046	−0·0043	−0·0160	941
942	Leonis	7·0	...	98·97	3	11 18 5·07	+3·1032	−0·0042		942
943	Leonis	6·3	...	96·26	3	11 18 10·70	+3·0756	−0·0008		943
944	78 Leonis ... ... ι	4·1	...	96·29	3	11 18 42·62	+3·1196	−0·0064	+0·0085	944
945	79 Leonis	5·5	...	96·97	3	11 18 54·34	+3·0809	−0·0014	−0·0034	945

905. Faint companion precedes south. 925. Very close double. Observed as one mass. 929, 935. Orange.
934. B.D. magnitude, 7·0. 936. Harvard magnitude, 6·0; B.D., 6·5. 944. A close faint companion follows north.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
901	96·22	3	73 21 6·2	+ 18·642	+ 0·165	+ 0·008	1478	20570					+ 16 2144	901
902	02·25	3	89 45 11·3	+ 18·722	+ 0·153			20632	594				+ 0 2693	902
903	98·60	3	88 36 53·5	+ 18·759	+ 0·151				624	4102			+ 1 2471	903
904	98·76	6	85 53 39·6	+ 18·766	+ 0·151	— 0·033	1484	20672	626	4103	2775	2933	+ 4 2375	904
905	96·28	3	84 43 39·5	+ 18·787	+ 0·151	+ 0·009	1487	20692	641		2781		+ 5 2384	905
906	98·92	3	86 10 2·2	+ 18·839	+ 0·147			20720	665	4117			+ 4 2378	906
907	96·96	3	86 59 9·8	+ 18·843	+ 0·146	— 0·006	1491	20727		4118	2785		+ 3 2408	907
908	98·26	3	83 5 57·7	+ 18·869	+ 0·146	+ 0·028	1493	20747	677			2947	+ 7 2356	908
909	98·28	3	76 43 29·4	+ 18·874	+ 0·149			20748				2948	+ 13 2302	909
910	97·65	3	75 16 37·2	+ 18·876	+ 0·149	+ 0·064	1494	20751				2951	+ 14 2294	910
911	95·71	9	78 55 31·8	+ 18·960	+ 0·142	+ 0·020	1500	20826	743		2804	2962	+ 11 2283	911
912	98·30	3	85 52 45·5	+ 19·010	+ 0·136			20874	779	4145			+ 4 2388	912
913	97·64	3	88 26 37·6	+ 19·046	+ 0·132			20919	817	4156	2817		+ 1 2495	913
914	99·23	3	89 40 11·2	+ 19·057	+ 0·131			20929					+ 0 2710	914
915	98·95	3	87 21 20·7	+ 19·060	+ 0·132			20934	824	4159			+ 2 2367	915
916	96·23	3	88 43 47·4	+ 19·139	+ 0·126	— 0·008	1517	21006	876	4168	2835		+ 1 2501	916
917	96·28	3	83 16 50·9	+ 19·146	+ 0·127	— 0·027	1519	21019	881			2983	+ 6 2369	917
918	98·27	3	89 2 1·2	+ 19·151	+ 0·125	+ 0·010	1520	21027	884	4169			+ 1 2502	918
919	02·27	3	89 46 36·1	+ 19·176	+ 0·123			21045	903		2839		+ 0 2718	919
920	02·30	3	87 44 2·4	+ 19·218	+ 0·120			21086	923	4176			+ 2 2373	920
921	96·89	5	85 50 43·9	+ 19·261	+ 0·117	+ 0·012	1526	21125	952	4182	2851	3002	+ 4 2407	921
922	96·22	3	83 21 40·3	+ 19·265	+ 0·118	0·000	1527	21131	960			3003	+ 6 2384	922
923	00·27	5	90 12 38·9	+ 19·326	+ 0·111	+ 0·120		21200	1002		2862		+ 0 2728	923
924	96·95	3	89 27 44·0	+ 19·334	+ 0·111	— 0·017	1533	21208	1007		2865	3012	+ 0 2729	924
925	99·93	3	85 49 20·5	+ 19·342	+ 0·111	+ 0·004		21216	1014	4189			+ 4 2415	925
926	98·26	3	76 47 37·3	+ 19·353	+ 0·112				1025			3014	+ 13 2348	926
927	98·62	3	82 7 23·5	+ 19·366	+ 0·110	+ 0·022	1535	21242	1036		2872	3015	+ 8 2455	927
928	95·30	4	116 45 12·7	+ 19·381	+ 0·100	+ 0·008	1536	21260			2873			928
929	97·97	3	88 14 55·9	+ 19·389	+ 0·106			21262	1051	4196			+ 1 2519	929
930	96·27	3	87 30 6·4	+ 19·409	+ 0·105	+ 0·060	1539	21295	1073	4201			+ 2 2387	930
931	96·21	3	89 31 31·1	+ 19·551	+ 0·091	— 0·011	1547	21464	81				+ 0 2761	931
932	97·30	3	87 11 9·7	+ 19·553	+ 0·092			21467	83	4225			+ 3 2475	932
933	96·16	7	68 55 41·4	+ 19·554	+ 0·095	+ 0·115	1546	21461			2905	3045	+ 21 2298	933
934	96·28	3	81 23 31·2	+ 19·554	+ 0·092			21468	85			3046	+ 8 2476	934
935	96·30	3	87 26 22·6	+ 19·617	+ 0·085	+ 0·142	1552	21542*	154	4235			+ 2 2409	935
936	96·62	3	87 48 5·4	+ 19·646	+ 0·082	+ 0·047	1556	21575	182	4243		3068	+ 2 2411	936
937	00·99	3	104 14 14·6	+ 19·655	+ 0·078	— 0·209	1557	21589	198		2930	3069	— 13 3345	937
938	02·30	3	85 49 52·2	+ 19·660	+ 0·080			21593	201	4247			+ 4 2449	938
939	00·00	3	117 47 4·9	+ 19·674	+ 0·074	— 0·010								939
940	96·98	3	83 25 20·8	+ 19·683	+ 0·078	0·000	1558	21632	223			3073	+ 6 2437	940
941	98·30	3	82 49 0·4	+ 19·689	+ 0·077	0·000		21640	230				+ 7 2440	941
942	98·97	3	82 51 54·2	+ 19·718	+ 0·074			21679	260				+ 7 2443	942
943	96·26	3	89 19 9·0	+ 19·719	+ 0·073			21684	262	4260		3081	+ 0 2782	943
944	96·29	3	78 55 11·3	+ 19·728	+ 0·073	+ 0·063	1560	21693	269			3083	+ 11 2348	944
945	96·97	3	88 2 35·5	+ 19·731	+ 0·072	— 0·008	1562	21700	273	4263	2947	3085	+ 2 2418	945

923. Authority for Proper Motions: Radcliffe, 1890, 2862. 925. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 939. The Proper Motions have been specially computed for the present catalogue. 941. Authority for Proper Motions: Porter.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
946	Leonis	6·1	...	98·29	3	11 19 47·74	+3·1222	−0·0068		946
947	82 Leonis	6·7	...	99·62	3	11 20 30·93	+3·0882	−0·0023	−0·0035	947
948	80 Leonis	6·4	...	00·32	3	11 20 41·59	+3·0903	−0·0026	−0·0065	948
949	83 Leonis	6·3	...	96·30	3	11 21 41·54	+3·0866	−0·0021	−0·0514	949
950	Leonis	7·8*	...	99·30	3	11 22 14·41	+3·0801	−0·0012	−0·0010	950
951	84 Leonis ... ... τ	5·2	...	97·55	12	11 22 47·63	+3·0856	−0·0019	−0·0010	951
952	Leonis	8·0	2	02·30	3	11 24 12·53	+3·0735	−0·0002		952
953	Leonis	6·7	...	98·31	3	11 24 30·01	+3·1023	−0·0044	−0·0032	953
954	Leonis	7·7	2	97·65	3	11 26 14·77	+3·0851	−0·0019		954
955	Hydrae	6·0‡	...	95·35	3	11 27 18·65	+2·9686	+0·0152	+0·0020	955
956	Hydrae	6·0‡	...	95·35	3	11 27 19·00	+2·9686	+0·0152	+0·0020	956
957	Hydrae ... ... ξ	3·8	...	95·31	5	11 28 4·91	+2·9599	+0·0168	−0·0166	957
958	Leonis	6·7	...	97·28	3	11 28 27·98	+3·0825	−0·0015		958
959	89 Leonis	5·7	...	96·26	3	11 29 14·87	+3·0840	−0·0017	−0·0128	959
960	Leonis	7·0	...	98·30	3	11 31 25·79	+3·0921	−0·0032		960
961	Hydrae	5·8	...	00·32	3	11 31 37·15	+2·9654	+0·0183	+0·0140	961
962	91 Leonis ... ... υ	4·3	1	98·20	9	11 31 49·67	+3·0719	+0·0005	−0·0018	962
963	Virginis	7·0	1	98·33	3	11 32 8·87	+3·0921	−0·0033		963
964	1 Virginis ... ... ω	5·5	...	96·30	3	11 33 18·20	+3·0965	−0·0042	−0·0020	964
965	Leonis	7·4	2	97·29	4	11 35 16·44	+3·0765	−0·0003		965
966	92 Leonis	5·4	...	96·47	6	11 35 35·11	+3·1299	−0·0119	−0·0049	966
967	Leonis	7·5	1	01·65	3	11 35 48·51	+3·0724	+0·0006		967
968	Virginis	7·3	1	97·32	3	11 37 18·00	+3·0795	−0·0009		968
969	2 Virginis ... ... ξ	4·8	...	97·68	5	11 40 7·77	+3·0907	−0·0039	+0·0035	969
970	3 Virginis ... ... ν	4·0	1	96·29	3	11 40 43·15	+3·0867	−0·0029	−0·0026	970
971	Virginis	7·1	...	98·54	4	11 40 57·66	+3·0878	−0·0033		971
972	Virginis	8·0	1	02·28	3	11 41 38·94	+3·0803	−0·0013		972
973	4 Virginis ... ... A[1]	5·3	1	97·09	4	11 42 46·64	+3·0883	−0·0037	−0·0048	973
974	Hydrae	5·3	...	95·31	4	11 43 41·98	+3·0260	+0·0152		974
975	Virginis	7·0	1	97·27	3	11 43 55·29	+3·0731	+0·0009	−0·0150	975
976	94 Leonis ... ... β	2·2	...	99·44	9	11 43 57·52	+3·0980	−0·0072	−0·0356	976
977	Virginis	6·7	...	98·30	3	11 43 59·52	+3·0821	−0·0020	0·0000	977
978	Virginis	7·8	1	97·98	3	11 44 38·97	+3·0771	−0·0004		978
979	5 Virginis ... ... β	3·0	1	98·97	11	11 45 29·12	+3·0762	−0·0001	+0·0481	979
980	Virginis	5·5	1	00·82	4	11 45 55·50	+3·0659	+0·0036		980
981	64 Ursae Majoris ... γ	2·5	...	96·28	3	11 48 34·27	+3·1653	−0·0427	+0·0098	981
982	Virginis	6·4	...	97·81	4	11 48 43·05	+3·0740	+0·0007		982
983	Hydrae	5·5	...	95·31	4	11 49 37·00	+3·0443	+0·0151		983
984	Virginis	7·4	1	01·80	4	11 53 5·68	+3·0737	+0·0008		984
985	Virginis	7·1	2	97·29	3	11 53 6·36	+3·0756	−0·0006	+0·0002	985
986	Virginis	6·3	1	97·35	3	11 53 56·33	+3·0734	+0·0010	−0·0062	986
987	Virginis	6·8	3	97·64	3	11 54 16·63	+3·0741	+0·0003		987
988	7 Virginis ... ... b	5·7	1	96·33	3	11 54 49·54	+3·0749	−0·0006	−0·0022	988
989	8 Virginis ... ... π	4·0	1	98·24	12	11 55 44·88	+3·0758	−0·0021	−0·0028	989
990	Virginis	6·5	...	98·30	3	11 58 38·13	+3·0736	−0·0014	−0·0127	990

949. North preceding and brighter of two stars. 962. Red. 978. The Declination of this star in W. B. (1) appears to be 10° too great.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
946	98·29	3	78 1 11·0	+19·744	+0·071			21722	287				+12 2335	946
947	99·62	3	86 8 53·1	+19·755	+0·069	+0·030	1566	21744	305	4268		3089	+ 4 2461	947
948	00·98	3	85 35 20·0	+19·758	+0·068	+0·041	1567	21749	310	4272			+ 4 2463	948
949	96·30	3	86 26 30·8	+19·773	+0·066	−0·181	1568	21781	330	4278	2960	3092	+ 3 2502	949
950	99·30	3	88 4 23·2	+19·781	+0·065	+0·130		21798	337	4280			+ 2 2431	950
951	96·06	4	86 35 34·7	+19·788	+0·064	+0·006	1570	21817	348	4284	2965	3097	+ 3 2504	951
952	02·30	3	89 47 29·1	+19·808	+0·061			21850	378				+ 0 2793	952
953	98·31	3	81 50 55·4	+19·812	+0·061	+0·011		21860	381				+ 8 2512	953
954	97·65	3	86 23 8·4	+19·835	+0·058			21895	409	4297			+ 3 2513	954
955	02·31	3	118 42 54·5	+19·848	+0·053	−0·180	1578				2990			955
956	02·31	3	118 42 46·6	+19·849	+0·053	−0·180	1578				2991			956
957	95·30	3	121 18 16·5	+19·858	+0·051	+0·025	1580				2995	3125		957
958	97·28	3	86 56 53·5	+19·863	+0·053				448	4305			+ 3 2519	958
959	96·26	3	86 23 3·3	+19·874	+0·052	+0·089	1582	21965	459	4307		3127	+ 3 2521	959
960	98·30	3	83 20 12·9	+19·897	+0·048			22008	503				+ 6 2470	960
961	02·81	2	123 0 57·6	+19·899	+0·045	−0·006	1587				3008			961
962	96·92	5	90 16 16·9	+19·901	+0·046	−0·047	1586	22022	511		3010	3133	− 0 2458	962
963	99·99	5	83 10 35·6	+19·904	+0·046			22030	514				+ 7 2465	963
964	96·30	3	81 18 43·9	+19·916	+0·044	+0·001	1590	22066	538		3014	3139	+ 8 2532	964
965	97·29	4	88 29 36·5	+19·936	+0·040			22109	571	4327			+ 1 2597	965
966	99·96	3	68 5 29·8	+19·938	+0·040	+0·049	1592	22111			3028	3148	+22 2391	966
967	02·30	3	90 7 10·1	+19·941	+0·039				583		3030		+ 0 2821	967
968	97·32	3	87 4 56·3	+19·954	+0·036			22155	609	4338			+ 3 2539	968
969	96·27	3	81 11 9·2	+19·977	+0·030	+0·008	1599	22223	660			3158	+ 9 2545	969
970	96·29	3	82 54 37·0	+19·981	+0·029	+0·165	1601	22242	668		3052	3159	+ 7 2479	970
971	98·29	3	82 16 8·8	+19·983	+0·029			22248	672				+ 7 2480	971
972	02·28	3	85 58 10·6	+19·988	+0·027			22264	686	4350			+ 4 2526	972
973	96·35	3	81 11 54·7	+19·996	+0·025	−0·024	1602	22292	706			3164	+ 9 2549	973
974	95·31	4	116 11 36·7	+20·001	+0·023						3065			974
975	97·27	3	89 45 46·3	+20·003	+0·023	0·000		22312	719			3165	+ 0 2843	975
976	98·33	3	74 52 7·7	+20·003	+0·023	+0·098	1605	22314			3067	3166	+15 2383	976
977	98·30	3	84 15 23·4	+20·003	+0·023	+0·180		22322	722			3167	+ 5 2545	977
978	97·98	3	87 12 42·2	+20·007	+0·021			22330	734	4356			+ 3 2560	978
979	99·32	3	87 40 17·8	+20·012	+0·020	+0·262	1606	22341	745	4361	3071	3169	+ 2 2489	979
980	01·00	3	94 46 37·5	+20·014	+0·019			22361	753		3072		− 4 3152	980
981	96·28	3	35 44 56·9	+20·027	+0·014	−0·008	1608	22411			3086	3177	+54 1475	981
982	97·31	3	88 53 29·9	+20·028	+0·014			22421	794	4369			+ 1 2624	982
983	95·31	4	115 9 33·6	+20·032	+0·012			22439			3089			983
984	02·28	3	88 34 22·5	+20·043	+0·005			22538	868	4385			+ 1 2633	984
985	97·29	3	85 57 39·8	+20·043	+0·005	+0·005	1616	22537	869	4386			+ 4 2553	985
986	97·35	3	88 54 48·1	+20·045	+0·003	−0·044		22555	883	4389		3191	+ 1 2636	986
987	97·64	3	87 36 55·0	+20·046	+0·003				889	4390			+ 2 2499	987
988	96·33	3	85 47 16·0	+20·047	+0·002	−0·015	1617	22571	899	4392		3193	+ 4 2556	988
989	97·06	4	82 49 40·8	+20·049	0·000	+0·017	1618	22590	919		3117	3197	+ 7 2502	989
990	98·30	3	83 52 59·1	+20·052	−0·006	+0·073		22659	961				+ 6 2543	990

950. Authority for Proper Motions: Boss. 953, 986, 990. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 975. The Proper Motions have been specially computed for the present catalogue. 977. Authority for Proper Motions: Bossert.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
991	Virginis	8·5	2	02·29	3	11 58 57·85	+3·0731	−0·0002	+0·0040	991
992	9 Virginis ... ... o	4·0	1	97·44	17	12 0 6·89	+3·0726	−0·0030	−0·0159	992
993	Virginis	6·6	...	98·36	3	12 0 52·52	+3·0730	+0·0033	−0·0032	993
994	Virginis	7·5	1	02·30	3	12 2 4·19	+3·0727	+0·0021		994
995	Virginis	7·3	1	97·27	3	12 2 53·31	+3·0724	+0·0015	−0·0021	995
996	10 Virginis	6·2	1	96·36	3	12 4 33·79	+3·0716	+0·0009	+0·0008	996
997	11 Virginis	5·7	...	96·31	3	12 4 57·56	+3·0695	−0·0011	−0·0125	997
998	2 Corvi ... ... ε	3·4	...	98·46	7	12 4 58·76	+3·0845	+0·0144	−0·0059	998
999	Virginis	7·3	1	97·33	3	12 6 33·28	+3·0696	−0·0001		999
1000	Virginis	7·2	3	97·56	4	12 8 49·29	+3·0702	+0·0009		1000
1001	Hydrae	6·5	...	96·71	5	12 9 55·23	+3·1044	+0·0191		1001
1002	Virginis	8·0	1	02·29	3	12 11 51·27	+3·0716	+0·0021		1002
1003	13 Virginis	5·9	...	98·36	3	12 13 32·63	+3·0730	+0·0028	−0·0001	1003
1004	Ursae Minoris	6·9	1	00·93	5	12 14 23·88	+0·3195	+0·7796	−0·0858	1004
1005	15 Virginis ... ... η	4·0	...	97·59	13	12 14 47·33	+3·0729	+0·0028	−0·0056	1005
1006	16 Virginis c	5·3	1	96·32	3	12 15 16·19	+3·0667	+0·0008	−0·0213	1006
1007	17 Virginis	6·5	...	98·32	3	12 17 26·91	+3·0623	−0·0002	−0·0126	1007
1008	Virginis	6·7	1	98·83	4	12 18 6·79	+3·0809	+0·0052	+0·0005	1008
1009	Virginis	7·3	1	97·29	3	12 20 54·37	+3·0672	+0·0017		1009
1010	Virginis	7·7	1	02·30	3	12 21 38·77	+3·0719	+0·0029		1010
1011	15 Comae ... ... γ	4·4	...	95·31	5	12 21 57·22	+3·0024	−0·0124	−0·0081	1011
1012	Virginis	6·0	1	98·66	3	12 22 43·64	+3·0821	+0·0053	−0·0065	1012
1013	Virginis	6·7	...	98·37	3	12 22 47·39	+3·0917	+0·0075	−0·0178	1013
1014	Virginis	6·8	...	97·99	3	12 23 12·57	+3·0610	+0·0007	−0·0037	1014
1015	Virginis	7·1	...	98·33	3	12 24 23·06	+3·0593	+0·0005	−0·0070	1015
1016	7 Corvi ... ... δ^2	3·0	...	98·84	7	12 24 41·27	+3·1138	+0·0120	−0·0142	1016
1017	Virginis	8·0	2	01·65	3	12 26 7·91	+3·0677	+0·0024		1017
1018	Virginis	6·1	...	98·30	3	12 26 16·49	+3·0508	−0·0008		1018
1019	21 Virginis ... ... q	5·3	...	00·99	3	12 28 37·01	+3·0988	+0·0082	−0·0082	1019
1020	9 Corvi ... ... β	2·7	...	97·94	6	12 29 7·95	+3·1441	+0·0166	−0·0008	1020
1021	Virginis	7·0	1	97·35	3	12 30 10·20	+3·0641	+0·0022	−0·0073	1021
1022	25 Virginis ... ... f	5·3	1	98·36	3	12 31 38·19	+3·0897	+0·0064	−0·0035	1022
1023	Hydrae	5·4	...	95·31	4	12 32 24·00	+3·1670	+0·0194	+0·0030	1023
1024	Virginis	6·9	...	97·67	3	12 32 46·21	+3·0566	+0·0013		1024
1025	Virginis	6·2	...	96·34	3	12 32 58·53	+3·0599	+0·0018		1025
1026	Virginis	5·9	...	97·33	3	12 33 16·35	+3·0646	+0·0025		1026
1027	Virginis ... ... R	Var.	6	00·96	3	12 33 25·46	+3·0470	−0·0001		1027
1028	Comae	8·3*	...	00·98	3	12 34 22·63	+2·9977	−0·0067		1028
1029	Draconis	8·5	1	96·98	6	12 36 1·99	+2·5173	−0·0458	−0·0854	1029
1030	30 Virginis ... ... ρ	4·9	...	00·30	11	12 36 49·35	+3·0320	−0·0015	+0·0033	1030
1031	31 Virginis ... ... d^2	5·5	...	98·31	3	12 36 53·01	+3·0451	+0·0002	−0·0071	1031
1032	Virginis	8·2	2	02·32	3	12 36 56·67	+3·0688	+0·0034		1032
1033	27 Comae	5·3	...	96·15	6	12 41 39·02	+2·9983	−0·0044	−0·0009	1033
1034	Virginis	6·4	...	97·99	3	12 41 57·52	+3·0450	+0·0010		1034
1035	Virginis	6·3	...	98·36	3	12 42 23·21	+3·0975	+0·0073	−0·0014	1035

991. A star (Albany 4408), magnitude 8·0, precedes several seconds. 992. Light orange. 1017. A star (Albany 4505), magnitude 8·7, precedes 3s and is slightly north. 1018, 1022, 1035. The magnitude of each of these stars in W. B. (1) is 9. 1027. 1897 April 14, mag. 8·3; 1897 May 1, mag. 7·9; 1898 April 29, mag. 9·3; 1902 April 18, mag. 9·5; 1902 April 28, mag. about 10; 1903 April 22, mag. 6·5. The limits are 6·5 and 11·0; the period is 145 days.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
991	02·29	3	86 5 11·3	+20·052	−0·007	+0·550		22667	966	4409			+ 4 2568	991
992	95·81	6	80 42 41·4	+20·052	−0·009	−0·049	1623		991		3130	3205	+ 9 2583	992
993	98·36	3	92 34 26·7	+20·052	−0·010	+0·005		22715	999		3133	3209	− 2 3460	993
994	02·30	3	90 4 23·3	+20·051	−0·013			22742	1011		3137		+ 0 2894	994
995	97·27	3	88 49 17·7	+20·051	−0·014	+0·059		22761	1026	4431			+ 1 2656	995
996	96·36	3	87 32 26·7	+20·048	−0·018	+0·187	1625	22807	14	4440		3215	+ 2 2517	996
997	96·31	3	83 38 13·1	+20·047	−0·018	−0·039	1627	22818	19			3217	+ 6 2559	997
998	98·30	3	112 3 48·2	+20·047	−0·018	−0·021	1626	22817			3152	3218	−21 3487	998
999	97·33	3	85 23 15·9	+20·044	−0·021				51	4445		3225	+ 4 2583	999
1000	97·56	4	87 10 59·1	+20·037	−0·026			22927	87	4451			+ 3 2616	1000
1001	99·98	3	118 40 49·5	+20·033	−0·028						3173			1001
1002	02·29	3	89 5 31·2	+20·025	−0·032			23005	138	4456			+ 1 2676	1002
1003	98·36	3	90 13 51·7	+20·017	−0·035	+0·029	1643	23052	167		3195	3248	+ 0 2920	1003
1004	02·66	3	1 44 45·1	+20·013	−0·012	−0·076	1672					3252	+88 71	1004
1005	97·07	8	90 6 39·5	+20·010	−0·037	+0·022	1647	23088	191		3199	3251	+ 0 2926	1005
1006	96·32	3	86 7 50·3	+20·008	−0·038	+0·063	1652	23113	207	4465		3256	+ 4 2604	1006
1007	98·32	3	84 8 17·3	+19·994	−0·043	+0·054	1657	23167	241				+ 6 2599	1007
1008	98·67	3	94 25 8·6	+19·989	−0·044	+0·036		23184			3209	3271	− 4 3268	1008
1009	97·29	3	87 24 15·0	+19·969	−0·049			23252	295	4485			+ 2 2539	1009
1010	02·30	3	89 37 46·4	+19·963	−0·051			23271	306				+ 0 2944	1010
1011	95·31	5	61 10 32·3	+19·960	−0·051	+0·086	1666	23279			3230	3285	+29 2288	1011
1012	98·66	3	94 3 42·7	+19·954	−0·053	+0·017		23307	331		3236	3287	− 3 3298	1012
1013	98·37	3	98 7 23·3	+19·953	−0·053	0·000		23312	334		3238		− 7 3409	1013
1014	97·99	3	85 2 58·1	+19·949	−0·054	−0·019			344				+ 5 2631	1014
1015	98·33	3	84 36 34·3	+19·939	−0·056	−0·050		23352	365				+ 5 2633	1015
1016	98·66	3	105 57 30·8	+19·936	−0·057	+0·146	1675	23359			3242	3291	−15 3482	1016
1017	02·30	3	88 7 13·0	+19·922	−0·060			23395	392	4507			+ 2 2552	1017
1018	98·30	3	81 50 36·2	+19·921	−0·059			23410	398				+ 8 2609	1018
1019	00·99	3	98 54 1·4	+19·896	−0·065	−0·008	1683	23471	437		3259	3310	− 8 3372	1019
1020	98·31	3	112 50 37·5	+19·890	−0·067	+0·054	1685	23489			3263	3313	−22 3401	1020
1021	97·35	3	87 11 21·3	+19·879	−0·067	−0·057		23525	463	4518			+ 3 2670	1021
1022	98·36	3	95 16 49·9	+19·861	−0·071	+0·019	1690	23576	485		3275	3321	− 5 3535	1022
1023	95·30	3	116 35 10·0	+19·852	−0·074	+0·100		23593			3279			1023
1024	97·67	3	85 9 36·8	+19·847	−0·072			23605	502	4524			+ 5 2654	1024
1025	96·34	3	86 10 1·0	+19·845	−0·073			23608	503	4525			+ 4 2631	1025
1026	97·33	3	87 35 41·2	+19·841	−0·073			23616	513	4529		3322	+ 2 2560	1026
1027	00·96	3	82 27 41·1	+19·839	−0·073								+ 7 2561	1027
1028	00·98	3	69 25 10·7	+19·827	−0·074								+20 2748	1028
1029	96·98	6	20 38 57·3	+19·805	−0·066	−0·042							+69 671	1029
1030	01·13	5	79 12 47·2	+19·794	−0·079	+0·088	1701		575		3299	3347	+11 2485	1030
1031	98·31	3	82 38 39·7	+19·793	−0·080	−0·006	1702	23697					+ 7 2568	1031
1032	02·32	3	88 57 21·0	+19·792	−0·080			23700		4540			+ 1 2739	1032
1033	97·62	3	72 52 34·2	+19·722	−0·087	−0·038		23818			3322		+17 2533	1033
1034	97·99	3	83 30 6·0	+19·717	−0·089			23824	669				+ 6 2660	1034
1035	98·36	3	95 45 14·9	+19·710	−0·092	+0·033		23839	678		3325	3361	− 5 3569	1035

991, 1013. Authority for Proper Motions: Porter. 993, 1035. Authority for Proper Motions: Auwers (Astronomische Nachrichten, 3511). 995, 1021. Authority for Proper Motions: Boss. 1008, 1012, 1014. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 1015. The Proper Motions have been specially computed for the present catalogue. 1020. Authority for Proper Motions: Auwers (Astronomische Nachrichten, 3929). 1023. Authority for Proper Motions: Radcliffe, 1890, 3279. 1029. Authority for Proper Motions: Schroeter. 1033. Authority for Proper Motions: Auwers (Berlin A).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1036	35 Virginis	6·9	3	97·87	14	12 42 45·85	+3·0549	+0·0022	−0·0030	1036
1037	Virginis	8·0	1	02·31	3	12 42 59·53	+3·0719	+0·0042		1037
1038	Virginis	8·2*	...	02·34	3	12 44 38·69	+3·0648	+0·0035	−0·0050	1038
1039	Virginis ... ... U	Var.	6	02·01	3	12 46 1·27	+3·0442	+0·0014		1039
1040	37 Virginis	6·8	2	97·35	3	12 46 31·36	+3·0558	+0·0027	−0·0036	1040
1041	Hydrae	6·1	...	95·31	5	12 46 37·17	+3·2056	+0·0201		1041
1042	31 Comae	5·1	...	00·04	7	12 46 49·65	+2·9280	−0·0096	−0·0027	1042
1043	Virginis	7·6	2	97·36	3	12 50 5·55	+3·0545	+0·0028		1043
1044	Virginis	7·3	1	97·66	3	12 50 31·39	+3·0697	+0·0044		1044
1045	43 Virginis ... ... δ	3·5	1	98·99	14	12 50 33·92	+3·0526	+0·0027	−0·0336	1045
1046	Virginis	7·3	1	98·32	3	12 52 20·74	+3·0623	+0·0038		1046
1047	Virginis	7·4	2	99·59	4	12 54 16·77	+3·0339	+0·0014		1047
1048	Virginis	7·4	2	98·37	3	12 55 25·32	+3·0495	+0·0029		1048
1049	Virginis	7·1	...	97·34	3	12 56 3·65	+3·0450	+0·0025		1049
1050	Hydrae	7·0	...	96·70	3	12 56 13·52	+3·2181	+0·0191		1050
1051	47 Virginis ... ... ε	2·8	...	98·56	22	12 57 11·91	+3·0056	−0·0006	−0·0192	1051
1052	Virginis	Var.	4	98·68	3	12 57 33·64	+3·0394	+0·0022		1052
1053	Virginis	7·2	...	98·00	3	12 59 38·11	+3·0677	+0·0047	0·0000	1053
1054	Virginis	8·0	3	02·32	3	13 2 13·46	+3·0657	+0·0047	−0·0067	1054
1055	Virginis	8·4	3	02·32	3	13 2 13·49	+3·0657	+0·0047	−0·0067	1055
1056	Virginis	7·7*	...	02·67	3	13 2 30·16	+3·0601	+0·0043		1056
1057	Virginis	6·5	1	98·34	3	13 3 46·71	+3·0357	+0·0025	+0·0040	1057
1058	Virginis	7·5	2	03·07	4	13 4 2·60	+3·0490	+0·0035		1058
1059	51 Virginis ... ... θ	4·0	1	98·25	21	13 4 46·24	+3·1054	+0·0079	−0·0043	1059
1060	Virginis	7·5	1	97·33	3	13 7 35·84	+3·0415	+0·0033		1060
1061	Virginis	6·6	2	98·35	3	13 8 51·77	+3·0590	+0·0046	−0·0046	1061
1062	Virginis	7·5	...	98·71	3	13 9 59·31	+3·0372	+0·0032		1062
1063	Virginis	7·7	1	02·32	3	13 10 27·65	+3·0474	+0·0039		1063
1064	Virginis	7·2	...	98·72	3	13 11 21·72	+3·0222	+0·0023		1064
1065	Virginis	7·4	...	00·41	3	13 11 45·76	+3·0600	+0·0049		1065
1066	Virginis	6·8	1	02·67	3	13 12 22·58	+3·0738	+0·0058		1066
1067	60 Virginis ... ... σ	5·0	...	02·38	3	13 12 33·23	+3·0290	+0·0029	−0·0034	1067
1068	Virginis	7·0	1	98·72	3	13 13 47·14	+3·0416	+0·0038		1068
1069	Virginis	6·7	1	98·37	3	13 15 10·01	+3·0440	+0·0040		1069
1070	Virginis	6·9	...	01·00	3	13 15 30·68	+3·0322	+0·0033	−0·0030	1070
1071	Virginis	7·0	1	00·99	3	13 15 37·05	+3·0465	+0·0042		1071
1072	Virginis	5·6	...	98·71	3	13 16 36·50	+3·0527	+0·0047		1072
1073	64 Virginis	5·9	...	01·38	3	13 17 7·13	+3·0288	+0·0032	−0·0063	1073
1074	Virginis	7·5	1	00·38	3	13 18 34·08	+3·0474	+0·0045	+0·0015	1074
1075	Virginis	7·7	1	02·98	3	13 18 35·76	+3·0473	+0·0045	0·0000	1075
1076	Virginis	7·1	...	00·72	3	13 19 12·55	+3·0575	+0·0051		1076
1077	Virginis	7·7*	...	02·67	3	13 19 39·02	+3·0335	+0·0037		1077
1078	67 Virginis ... ... α	1·2	...	99·07	17	13 19 55·36	+3·1585	+0·0116	−0·0044	1078
1079	Virginis	7·7	1	98·38	3	13 24 6·59	+3·0674	+0·0059		1079
1080	Virginis	6·7	...	98·72	3	13 24 41·33	+3·0591	+0·0055	−0·0036	1080

1039. 1897 May 18, Below 10 mag.; 1898 April 29, mag. 9·3; 1899 May 29, mag. about 8; 1902 April 28, mag. about 10; 1903 April 22, mag. 7·5; 1903 April 23, mag. 7·7. Chandler's limits are 7·7 and 12·8; the period is 207 days.
1052. 1896 May 27, Red, mag. 8; 1897 May 1, mag. 8·4; 1898 May 12, mag. 7·3; 1902 April 28, orange-red, mag. 8·1. Pickering's limits are 8·8 and 9·7 (Astronomische Nachrichten, 3347).
1059. Companion, magnitude 9·3, precedes north.
1076. Close double. Observed as one mass.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1036	96·89	7	85 52 52·2	+19·704	−0·091	+0·006	1708	23854	682	4570	3327	3362	+ 4 2653	1036
1037	02·31	3	89 48 47·2	+19·700	−0·092			23859	688				+ 0 2983	1037
1038	02·34	3	88 14 56·0	+19·673	−0·095	+0·660		23917		4578			+ 2 2585	1038
1039	02·01	3	83 54 8·5	+19·649	−0·097				747				+ 6 2664	1039
1040	97·35	3	86 23 58·7	+19·640	−0·098	−0·030	1714	23964	754	4586		3368	+ 3 2703	1040
1041	97·64	3	116 11 41·5	+19·639	−0·103						3343	3369		1041
1042	02·30	3	61 54 54·5	+19·635	−0·095	+0·018	1715	23973			3344	3370	+28 2156	1042
1043	97·36	4	86 24 34·0	+19·575	−0·105			24058		4605			+ 3 2714	1043
1044	97·66	3	89 24 9·7	+19·567	−0·106			24072	818	4606			+ 0 3002	1044
1045	96·68	3	86 3 32·5	+19·566	−0·106	+0·047	1723	24078	827	4608	3360	3378	+ 4 2669	1045
1046	98·32	3	88 1 49·4	+19·531	−0·110			24126	854	4609			+ 2 2604	1046
1047	98·36	3	82 57 12·7	+19·492	−0·112			24184	887				+ 7 2600	1047
1048	98·37	3	85 51 25·9	+19·469	−0·115			24209	910	4619			+ 4 2683	1048
1049	97·34	3	85 6 8·7	+19·455	−0·116				919	4622			+ 5 2702	1049
1050	96·70	3	114 7 37·6	+19·452	−0·122			24225			3389			1050
1051	96·35	3	78 30 11·7	+19·431	−0·117	−0·029	1735	24250	940		3392	3399	+11 2529	1051
1052	98·68	3	84 16 33·1	+19·423	−0·119				948				+ 5 2708	1052
1053	98·00	3	89 9 55·2	+19·377	−0·124	+0·113		24309	985	4638			+ 1 2786	1053
1054	02·32	3	88 52 39·2	+19·318	−0·128	+0·109			1028	4644			+ 1 2789	1054
1055	02·32	3	88 52 31·7	+19·317	−0·128	+0·109			1027	4645			+ 1 2789	1055
1056	02·67	3	87 59 25·0	+19·311	−0·129			24373		4648			+ 2 2626	1056
1057	98·34	3	84 14 24·9	+19·281	−0·130	+0·720		24414	1063				+ 6 2697	1057
1058	03·07	4	86 19 19·6	+19·274	−0·131			24424	6	4657			+ 3 2739	1058
1059	99·00	3	95 0 18·2	+19·257	−0·135	+0·037	1747	24448	17		3424	3420	− 4 3430	1059
1060	97·33	3	85 24 2·2	+19·186	−0·137			24523	68	4665			+ 4 2703	1060
1061	99·59	4	88 0 42·8	+19·154	−0·140	+0·030		24563	93	4668			+ 2 2646	1061
1062	98·71	3	84 57 10·3	+19·124	−0·141			24592	109				+ 5 2728	1062
1063	02·32	3	86 25 15·7	+19·112	−0·143			24603	119	4672			+ 3 2748	1063
1064	98·72	3	82 57 55·8	+19·088	−0·143			24626	136				+ 7 2627	1064
1065	00·41	3	88 13 54·3	+19·077	−0·146			24637	144	4676			+ 2 2653	1065
1066	02·67	3	90 8 54·0	+19·060	−0·147			24660	159		3457		+ 0 3040	1066
1067	02·38	3	84 0 11·3	+19·056	−0·146	−0·023	1762	24666	162			3445	+ 6 2722	1067
1068	98·72	3	85 47 8·1	+19·022	−0·149			24703		4686			+ 4 2721	1068
1069	98·37	3	86 11 12·7	+18·983	−0·151			24738	207	4697			+ 4 2728	1069
1070	01·00	3	84 38 51·8	+18·973	−0·151	+0·020	1768	24743	210				+ 5 2736	1070
1071	00·99	3	86 31 57·5	+18·971	−0·152			24747	212	4698			+ 3 2758	1071
1072	98·71	3	87 23 13·9	+18·942	−0·154				229	4703			+ 2 2664	1072
1073	01·38	3	84 19 14·3	+18·928	−0·154	+0·030	1770	24783	240				+ 5 2737	1073
1074	00·38	3	86 45 34·6	+18·885	−0·158	−0·216		24818	257	4708			+ 3 2765	1074
1075	02·98	3	86 45 28·2	+18·884	−0·158	−0·254		24821	259	4709			+ 3 2766	1075
1076	00·72	3	88 4 40·7	+18·866	−0·159				267	4712			+ 2 2671	1076
1077	02·67	3	85 4 36·1	+18·853	−0·159					4713			+ 5 2742	1077
1078	02·34	3	100 38 21·8	+18·845	−0·165	+0·018	1774	24845	277		3479	3465	−10 3672	1078
1079	98·38	3	89 21 47·5	+18·717	−0·169			24940		4728			+ 0 3065	1079
1080	98·72	3	88 23 5·8	+18·699	−0·169	+0·148		24963		4734			+ 1 2819	1080

1038. The Proper Motions have been specially computed for the present catalogue. 1053. Authority for Proper Motions: Bossert. 1054, 1055, 1057, 1074, 1075. Authority for Proper Motions: Porter. 1061. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 1080. The Proper Motion adopted is the mean of Boss and Bossert.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1081	Virginis	6·4	...	99·41	3	13 24 55·83	+3·0173	+0·0032		1081
1082	Virginis	6·3	...	00·15	4	13 24 59·14	+3·0073	+0·0027		1082
1083	Virginis	6·8	...	99·41	3	13 28 7·10	+3·0168	+0·0035		1083
1084	78 Virginis	5·0	...	98·36	3	13 29 3·77	+3·0358	+0·0045	+0·0014	1084
1085	79 Virginis ... ... ζ	3·4	...	99·18	16	13 29 35·78	+3·0735	+0·0065	−0·0205	1085
1086	Virginis	6·7	...	99·41	3	13 32 39·20	+3·0462	+0·0052		1086
1087	82 Virginis ... ... m	5·2	...	98·85	19	13 36 21·68	+3·1513	+0·0108	−0·0085	1087
1088	Boötis...	6·5	1	99·58	4	13 37 16·48	+2·9865	+0·0028	−0·0243	1088
1089	84 Virginis ... ... o	6·5	1	97·32	3	13 38 2·03	+3·0335	+0·0049	−0·0223	1089
1090	Virginis	6·4	...	98·74	3	13 38 41·93	+3·1215	+0·0093	−0·0038	1090
1091	Virginis	8·0	1	02·33	3	13 39 20·70	+3·0609	+0·0063		1091
1092	1 Centauri i	4·4	...	95·41	4	13 40 0·10	+3·4331	+0·0281	−0·0374	1092
1093	Virginis	7·2	...	99·41	3	13 41 5·56	+3·0166	+0·0044		1093
1094	Virginis	6·3	...	98·02	3	13 41 59·96	+3·0036	+0·0039	−0·0321	1094
1095	4 Boötis... ... ... τ	4·5	...	99·54	21	13 42 30·57	+2·8854	−0·0006	−0·0346	1095
1096	Virginis	8·0	1	02·41	3	13 44 16·79	+3·0209	+0·0048		1096
1097	Virginis	6·8	...	98·03	3	13 44 29·11	+3·0021	+0·0040		1097
1098	Virginis	6·3	1	98·41	3	13 45 23·33	+3·0104	+0·0044		1098
1099	Draconis	7·7	...	97·35	3	13 46 49·08	+1·9882	−0·0066		1099
1100	Virginis	7·7*	...	02·34	3	13 47 32·17	+3·0588	+0·0065		1100
1101	8 Boötis... ... ... η	2·8	...	99·52	20	13 49 55·32	+2·8615	−0·0005	−0·0049	1101
1102	92 Virginis	6·3	3	97·66	3	13 51 22·08	+3·0560	+0·0066	−0·0040	1102
1103	Virginis	7·4	1	02·34	3	13 51 36·87	+3·0347	+0·0057		1103
1104	Virginis	7·5	1	98·03	3	13 54 37·50	+3·0667	+0·0071		1104
1105	Virginis	7·1	2	97·35	3	13 56 32·56	+3·0188	+0·0054		1105
1106	93 Virginis ... ... τ	4·4	...	00·06	21	13 56 33·33	+3·0497	+0·0065	−0·0005	1106
1107	Virginis	7·8*	...	98·42	3	13 57 45·90	+3·0264	+0·0057	−0·0135	1107
1108	Boötis...	6·4	...	99·09	3	13 58 38·85	+2·9794	+0·0041		1108
1109	Virginis	6·3	...	99·42	3	13 58 54·52	+3·0103	+0·0052		1109
1110	Virginis	6·4	...	99·07	3	13 59 33·29	+3·0404	+0·0063		1110
1111	94 Virginis	6·6	...	98·92	12	14 0 59·94	+3·1723	+0·0116	−0·0032	1111
1112	Boötis...	7·4	...	99·07	3	14 1 26·15	+2·9840	+0·0044		1112
1113	Virginis	8·1	...	98·39	3	14 2 32·60	+3·0693	+0·0075		1113
1114	Virginis	7·4	...	99·41	3	14 2 42·96	+3·0677	+0·0074		1114
1115	Virginis	7·0	1	01·70	3	14 4 24·73	+3·0332	+0·0062		1115
1116	Virginis	7·3	2	97·34	3	14 5 41·97	+3·0572	+0·0071		1116
1117	Virginis	6·3	...	98·66	4	14 6 26·65	+3·0503	+0·0069		1117
1118	Virginis	5·8	2	98·06	3	14 7 12·00	+3·0373	+0·0065		1118
1119	98 Virginis ... ... κ	4·4	...	97·77	12	14 7 33·56	+3·1948	+0·0124	−0·0004	1119
1120	Virginis	6·8	1	98·38	3	14 9 50·51	+3·0250	+0·0062		1120
1121	16 Boötis... ... ... α	0·3	...	99·53	8	14 11 5·94	+2·8136	+0·0005	−0·0799	1121
1122	Virginis	7·6	1	99·40	3	14 11 21·08	+2·9896	+0·0051		1122
1123	Virginis	8·2	2	97·34	3	14 12 41·33	+3·0191	+0·0061		1123
1124	Virginis	7·3	2	97·71	3	14 13 27·57	+3·0196	+0·0062		1124
1125	Virginis	6·2	...	98·42	3	14 14 34·62	+3·0618	+0·0075		1125

1089. Orange. Companion, magnitude 9·1, precedes south. The Declination of this star in W.B. (1) appears to be 10° too great.
1118. Harvard magnitude, 4·9; B.D., 4·8. 1120. W.B. magnitude, 9.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1081	99·41	3	83 28 16·0	+18·691	−0·167			24967	364				+ 6 2750	1081
1082	99·10	3	82 18 15·9	+18·689	−0·167			24972	365				+ 7 2655	1082
1083	99·41	3	83 38 0·9	+18·588	−0·173			25050	428				+ 6 2756	1083
1084	98·36	3	85 49 38·2	+18·557	−0·176	+0·015	1788	25082	446	4753			+ 4 2764	1084
1085	02·37	3	90 5 4·4	+18·539	−0·179	−0·056	1789	25101	457		3523	3499	+ 0 3076	1085
1086	99·41	3	87 6 27·6	+18·436	−0·183			25177	515	4760			+ 3 2799	1086
1087	00·36	3	98 11 54·1	+18·306	−0·196	−0·046	1796	25258	580		3545	3525	− 7 3674	1087
1088	98·33	3	81 6 14·7	+18·273	−0·187	0·000		25288	600				+ 9 2798	1088
1089	97·32	3	85 57 20·7	+18·245	−0·191	+0·062	1800	25297	614	4781			+ 4 2775	1089
1090	98·74	3	94 59 42·5	+18·221	−0·198	+0·011		25314	624		3554	3531	− 4 3540	1090
1091	02·33	3	88 47 43·7	+18·197	−0·195			25337		4786			+ 1 2840	1091
1092	95·41	4	122 32 17·9	+18·173	−0·219	+0·151	1803				3562			1092
1093	99·41	3	84 22 56·9	+18·132	−0·196			25380	670				+ 5 2794	1093
1094	98·02	3	83 8 47·3	+18·099	−0·196	+0·121		25404	679				+ 7 2690	1094
1095	96·71	3	72 2 41·2	+18·080	−0·190	−0·040	1810	25426			3574	3551	+18 2782	1095
1096	02·41	3	84 57 19·6	+18·012	−0·201				723				+ 5 2801	1096
1097	98·03	3	83 9 28·2	+18·004	−0·201			25466	728				+ 7 2701	1097
1098	98·41	3	84 0 23·2	+17·969	−0·203			25485	739				+ 6 2800	1098
1099	97·35	3	28 59 2·4	+17·913	−0·138								+61 1381	1099
1100	02·34	3	88 40 53·0	+17·885	−0·209			25528	767	4807			+ 1 2857	1100
1101	96·43	3	71 6 3·0	+17·790	−0·200	+0·344	1821	25608			3607	3577	+19 2725	1101
1102	97·66	3	88 27 36·4	+17·731	−0·216	−0·018	1822	25633		4825			+ 1 2865	1102
1103	02·34	3	86 31 25·8	+17·721	−0·215			25641	850	4828			+ 3 2834	1103
1104	98·03	3	89 27 51·6	+17·596	−0·222			25705	896				+ 0 3118	1104
1105	97·35	3	85 15 49·5	+17·515	−0·222			25751	935	4845			+ 4 2816	1105
1106	00·36	3	87 58 17·4	+17·514	−0·224	+0·033	1829	25747	934	4844	3631	3597	+ 2 2761	1106
1107	98·42	3	85 58 11·7	+17·463	−0·225	+0·098		25794	961	4855			+ 4 2817	1107
1108	99·09	3	81 58 20·7	+17·424	−0·223			25816	982				+ 8 2810	1108
1109	99·42	3	84 37 5·8	+17·413	−0·225			25827					+ 5 2836	1109
1110	99·07	3	87 13 21·5	+17·385	−0·228			25849	1004	4865			+ 2 2768	1110
1111	02·61	3	98 24 51·3	+17·322	−0·241	−0·012	1833	25879	1030		3652	3609	− 8 3696	1111
1112	99·07	3	82 31 1·5	+17·303	−0·227			25892	1045				+ 7 2746	1112
1113	98·39	3	89 42 48·2	+17·253	−0·235			25904					+ 0 3134	1113
1114	99·41	3	89 34 48·5	+17·246	−0·236			25911	1062				+ 0 3135	1114
1115	01·70	3	86 43 43·4	+17·169	−0·236			25947	12	4882			+ 3 2859	1115
1116	97·34	3	88 43 39·5	+17·111	−0·240			25990	40	4888			+ 1 2895	1116
1117	98·42	3	88 10 3·2	+17·077	−0·240			26017	51	4895			+ 2 2783	1117
1118	98·06	3	87 7 11·0	+17·042	−0·241			26031	64	4897		3626	+ 3 2867	1118
1119	97·93	4	99 48 29·4	+17·026	−0·254	−0·141	1842	26035	68		3674	3628	− 9 3878	1119
1120	98·38	3	86 11 48·0	+16·919	−0·244			26093	114	4911			+ 4 2841	1120
1121	02·34	3	70 17 48·8	+16·860	−0·229	+1·977	1847	26132			3692	3641	+19 2777	1121
1122	99·40	3	83 27 15·2	+16·848	−0·244				146				+ 6 2863	1122
1123	97·34	3	85 48 16·5	+16·784	−0·248			26152	175	4920			+ 4 2844	1123
1124	97·71	3	85 51 45·5	+16·747	−0·249			26173	191	4922			+ 4 2847	1124
1125	98·42	3	89 9 18·8	+16·693	−0·255			26200	213	4927			+ 1 2913	1125

1088, 1094. Authority for Proper Motions: Bossert. 1090. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 1107. The Proper Motion adopted is the mean of Boss and Bossert.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1126	Virginis	7·0	...	98·72	3	14 15 22·67	+3·0643	+0·0076		1126
1127	Virginis	7·4	1	01·71	3	14 17 38·83	+3·0751	+0·0080		1127
1128	Virginis	6·9	2	97·35	3	14 18 8·38	+3·0501	+0·0072	+0·0150	1128
1129	Boötis	5·8	1	98·76	3	14 19 12·67	+2·9888	+0·0055		1129
1130	Virginis	7·0	...	98·73	3	14 20 50·36	+3·0533	+0·0074		1130
1131	Boötis	7·2	...	99·42	3	14 21 43·38	+2·9859	+0·0055		1131
1132	22 Boötis ... ... *f*	5·3	...	98·74	17	14 21 48·24	+2·7954	+0·0010	−0·0057	1132
1133	Virginis ... ... RS	Var.	2	03·07	2	14 22 15·82	+3·0029	+0·0060		1133
1134	Virginis	7·3	1	98·75	3	14 23 29·23	+3·0285	+0·0068	−0·0140	1134
1135	Virginis	7·0	1	99·41	3	14 23 54·58	+3·0155	+0·0064		1135
1136	Virginis	6·3	2	98·03	3	14 24 44·52	+3·0552	+0·0076		1136
1137	Virginis	6·5	1	98·73	3	14 25 45·01	+3·0002	+0·0061		1137
1138	Virginis	7·4	...	98·76	3	14 27 11·85	+3·0085	+0·0063		1138
1139	25 Boötis ... ... ρ	4·0	...	00·13	13	14 27 31·18	+2·5943	−0·0015	−0·0085	1139
1140	Virginis	7·0	2	99·09	3	14 28 3·48	+2·9914	+0·0059		1140
1141	Boötis	6·4	...	97·41	3	14 29 15·01	+2·4532	−0·0024		1141
1142	Virginis	7·9	2	01·73	3	14 30 34·42	+3·0170	+0·0067		1142
1143	Virginis	7·3	2	97·34	3	14 32 24·94	+3·0336	+0·0071		1143
1144	Virginis	8·1	...	98·06	3	14 36 19·64	+3·0649	+0·0081		1144
1145	Virginis	8·0	2	01·73	3	14 39 53·77	+3·0141	+0·0068		1145
1146	108 Virginis	5·5	...	98·40	3	14 40 24·49	+3·0556	+0·0079	−0·0050	1146
1147	36 Boötis ... ... ϵ^2	2·6	...	00·27	9	14 40 37·13	+2·6241	+0·0001	−0·0043	1147
1148	109 Virginis	3·8	...	99·41	3	14 41 11·47	+3·0378	+0·0074	−0·0090	1148
1149	Virginis	6·6	...	99·08	3	14 41 59·98	+3·0516	+0·0078		1149
1150	Virginis	7·7*	...	98·10	3	14 42 21·86	+3·0354	+0·0074		1150
1151	Virginis	7·5	1	99·42	3	14 43 55·45	+2·9748	+0·0060		1151
1152	Virginis	7·5	1	99·10	3	14 44 43·51	+3·0068	+0·0068		1152
1153	9 Librae ... ... α	2·7	...	98·18	13	14 45 20·64	+3·3197	+0·0155	−0·0093	1153
1154	Librae	6·5	2	99·10	3	14 45 52·79	+3·0703	+0·0083		1154
1155	Virginis	7·1	...	98·43	3	14 48 35·93	+3·0312	+0·0074		1155
1156	Virginis	6·7	...	99·41	3	14 48 42·85	+2·9681	+0·0060		1156
1157	Virginis	7·3	1	99·44	3	14 50 26·62	+2·9585	+0·0059		1157
1158	Boötis	7·8	2	01·40	3	14 50 29·18	+2·7767	+0·0027		1158
1159	Virginis	7·1	...	99·11	3	14 51 15·51	+3·0120	+0·0070		1159
1160	15 Librae ... ... ξ^2	5·7	...	99·10	10	14 51 20·41	+3·2495	+0·0131	−0·0019	1160
1161	Boötis	7·3	1	97·40	4	14 52 13·47	+2·2642	−0·0004		1161
1162	1 Serpentis	6·3	1	99·42	3	14 52 25·48	+3·0690	+0·0083	+0·0017	1162
1163	Virginis	6·3	1	99·41	3	14 54 23·50	+2·9926	+0·0066		1163
1164	Virginis	7·0	2	98·41	3	14 55 59·68	+3·0192	+0·0072	−0·0060	1164
1165	2 Serpentis	5·9	...	98·76	3	14 56 41·57	+3·0686	+0·0083	−0·0001	1165
1166	110 Virginis	4·7	...	99·41	3	14 57 50·75	+3·0321	+0·0075	−0·0050	1166
1167	Virginis	7·5	1	99·42	3	14 58 21·33	+2·9869	+0·0066		1167
1168	Virginis	8·0	1	00·42	3	14 59 8·36	+2·9756	+0·0064		1168
1169	Virginis	7·7	1	00·42	3	14 59 8·58	+2·9757	+0·0064		1169
1170	43 Boötis ... ... ψ	4·8	...	98·70	10	15 0 9·58	+2·5837	+0·0012	−0·0145	1170

1129. A star (B.D. + 6° 2874), magnitude 7·3, precedes several seconds at nearly same N.P.D. 1132. B.D. magnitude, 6·4; Radcliffe, 1890, 5·0. 1133. 1903 Jan. 22, mag. 7·5 (probably brighter); 1903 Jan. 28, reddish, mag. 7·3. Chandler's limits are 8·2 and about 12; the period is 355 days. 1147. 1902 June 2: the companion, ϵ^1, precedes $0^s·02$. 1155. The R.A. of this star in W.B. (1) appears to be 10^s too great.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1126	98·72	3	89 21 24·5	+16·654	−0·256			26221	225	4931			+ 0 3165	1126
1127	01·71	3	90 10 50·2	+16·543	−0·261			26273	271		3724		+ 0 3171	1127
1128	97·35	3	88 17 23·8	+16·519	−0·259	+0·500		26289	281	4941		3663	+ 1 2920	1128
1129	98·76	3	83 43 34·2	+16·465	−0·256			26315	303				+ 6 2875	1129
1130	98·73	3	88 33 18·0	+16·383	−0·264			26356		4953			+ 1 2927	1130
1131	99·42	3	83 36 42·9	+16·338	−0·260			26381	349				+ 6 2883	1131
1132	97·17	4	70 19 24·8	+16·335	−0·244	−0·029	1864	26396			3737	3679	+19 2810	1132
1133	03·07	2	84 52 21·4	+16·311	−0·262									1133
1134	98·75	3	86 45 53·5	+16·249	−0·266	−0·030		26427		4965			+ 3 2896	1134
1135	99·41	4	85 50 1·4	+16·227	−0·265			26440	394	4969			+ 4 2871	1135
1136	98·03	3	88 43 32·5	+16·184	−0·270			26464	407	4975			+ 1 2941	1136
1137	98·73	3	84 46 58·3	+16·132	−0·267			26492	427				+ 5 2886	1137
1138	98·76	3	85 24 54·9	+16·057	−0·270				453	4982			+ 4 2878	1138
1139	00·76	3	59 11 22·3	+16·040	−0·234	−0·125	1869	26550			3765	3694	+31 2628	1139
1140	99·16	4	84 14 0·3	+16·011	−0·270			26544	464				+ 5 2889	1140
1141	97·41	3	52 35 55·6	+15·948	−0·224			26592				3700	+37 2545	1141
1142	01·73	3	86 5 40·0	+15·878	−0·276			26604	513	4997			+ 4 2885	1142
1143	97·34	3	87 17 12·2	+15·779	−0·280			26653	551	5008			+ 2 2844	1143
1144	98·06	3	89 28 2·2	+15·565	−0·289								+ 0 3223	1144
1145	01·73	3	86 5 33·8	+15·367	−0·289				691	5038			+ 4 2909	1145
1146	98·40	3	88 51 36·7	+15·338	−0·294	−0·001	1884		704	5044			+ 1 2972	1146
1147	99·43	3	62 30 14·5	+15·326	−0·253	−0·001	1890	26908			3818	3737	+27 2417	1147
1148	99·41	3	87 41 8·6	+15·294	−0·293	+0·026	1889	26902	718	5046		3738	+ 2 2862	1148
1149	99·08	3	88 36 31·2	+15·248	−0·296			26926		5050			+ 1 2981	1149
1150	98·10	3	87 32 39·3	+15·227	−0·295			26936	746	5056			+ 2 2865	1150
1151	99·42	3	83 37 36·2	+15·138	−0·291			26980	777			3747	+ 6 2946	1151
1152	99·10	3	85 42 46·7	+15·092	−0·295			27001		5063			+ 4 2924	1152
1153	98·44	3	105 37 34·5	+15·056	−0·326	+0·072	1894	27008			3836	3751	−15 3966	1153
1154	00·41	5	89 50 39·3	+15·025	−0·303			27039	818		3838		+ 0 3253	1154
1155	98·43	3	87 21 11·3	+14·866	−0·303			27117	879	5080			+ 2 2881	1155
1156	99·41	3	83 20 58·5	+14·860	−0·297			27135	880			3767	+ 6 2957	1156
1157	99·44	3	82 48 32·6	+14·757	−0·298			27162	907			3772	+ 7 2865	1157
1158	01·40	3	71 53 28·0	+14·755	−0·281			27176					+18 2955	1158
1159	99·11	3	86 10 41·7	+14·709	−0·305			27196	924	5094			+ 3 2956	1159
1160	00·42	3	101 0 22·0	+14·705	−0·329	−0·006	1903	27182			3859	3775	−10 3989	1160
1161	97·40	4	48 27 38·5	+14·652	−0·232			27273					+41 2539	1161
1162	99·42	3	89 45 52·1	+14·640	−0·312	+0·006	1908	27233	945		3866		+ 0 3277	1162
1163	99·41	3	85 1 58·3	+14·522	−0·307			27297	983	5104			+ 5 2954	1163
1164	98·41	3	86 42 14·5	+14·424	−0·312	+0·080		27337	1009	5111			+ 3 2966	1164
1165	98·76	3	89 44 41·2	+14·382	−0·318	+0·010	1912	27352	1019		3882		+ 0 3297	1165
1166	99·41	3	87 30 57·2	+14·312	−0·316	−0·010	1915	27393		5118		3799	+ 2 2905	1166
1167	99·42	3	84 46 24·0	+14·280	−0·312			27411	1058				+ 5 2962	1167
1168	00·42	3	84 6 45·0	+14·232	−0·312			27430	1074				+ 6 2983	1168
1169	00·42	3	84 6 54·6	+14·232	−0·312			27431	1075				+ 6 2983	1169
1170	99·42	3	62 39 44·5	+14·169	−0·273	+0·008	1922	27481			3896	3806	+27 2447	1170

1128. Authority for Proper Motions: Porter.

1134. The Proper Motions have been specially computed for the present catalogue.

1164. Authority for Proper Motions: Boss.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1171	Virginis	7·3	...	99·42	3	15 0 58·68	+ 2·9960	+0·0068		1171
1172	Virginis	7·1	...	99·43	3	15 1 20·49	+ 2·9738	+0·0064		1172
1173	Virginis	6·8	...	97·44	3	15 2 3·72	+ 3·0269	+0·0074		1173
1174	Virginis	6·1	...	99·43	3	15 2 42·61	+ 2·9742	+0·0064		1174
1175	Serpentis	7·0	...	98·92	4	15 4 27·31	+ 3·0012	+0·0070		1175
1176	Serpentis	8·4	2	02·86	3	15 6 24·74	+ 3·0121	+0·0072		1176
1177	24 Librae ... ... ι^1	4·5	...	99·30	14	15 6 31·15	+ 3·4152	+0·0171	−0·0037	1177
1178	Ursae Minoris	7·2	2	01·53	8	15 9 20·94	− 20·5566	+7·0170	+0·0072	1178
1179	3 Serpentis	6·5	1	02·86	3	15 10 13·03	+ 2·9810	+0·0067	−0·0020	1179
1180	4 Serpentis	5·8	...	97·47	3	15 10 43·33	+ 3·0599	+0·0081	−0·0081	1180
1181	Serpentis	7·1	...	99·09	3	15 10 52·26	+ 3·0525	+0·0080	+0·0070	1181
1182	27 Librae ... ... β	2·6	...	98·80	13	15 11 37·40	+ 3·2301	+0·0118	−0·0079	1182
1183	Serpentis	6·7	...	99·43	3	15 13 16·94	+ 3·0500	+0·0079		1183
1184	5 Serpentis	5·2	...	98·44	3	15 14 12·34	+ 3·0352	+0·0077	+0·0238	1184
1185	Serpentis	8·5	1	02·86	3	15 14 41·86	+ 3·0079	+0·0071		1185
1186	6 Serpentis	5·4	...	97·16	3	15 15 56·46	+ 3·0538	+0·0080	−0·0053	1186
1187	Serpentis ... ... S	Var.	2	97·12	3	15 16 58·49	+ 2·8076	+0·0042		1187
1188	30 Librae ... ... o^2	6·5	1	99·55	7	15 17 27·03	+ 3·3403	+0·0142	−0·0025	1188
1189	Serpentis	8·0	1	03·21	3	15 17 40·51	+ 3·0410	+0·0077	−0·0267	1189
1190	Serpentis	7·3	2	98·77	3	15 17 55·46	+ 3·0582	+0·0081		1190
1191	32 Librae ... ... ζ^1	5·9	...	99·58	16	15 22 36·89	+ 3·3764	+0·0148	−0·0010	1191
1192	Serpentis	7·1	...	97·80	3	15 23 27·29	+ 3·0555	+0·0080		1192
1193	10 Serpentis	5·7	1	98·78	3	15 23 35·06	+ 3·0331	+0·0076	−0·0068	1193
1194	Serpentis	7·8*	...	99·09	3	15 26 37·54	+ 3·0503	+0·0078	−0·0047	1194
1195	Serpentis	7·7*	...	02·40	3	15 28 17·25	+ 3·0053	+0·0071		1195
1196	Serpentis	7·0	1	02·86	3	15 29 33·64	+ 2·9788	+0·0067		1196
1197	Serpentis	6·3	1	97·47	3	15 30 1·18	+ 3·0356	+0·0076		1197
1198	Serpentis	8·6	2	02·98	3	15 30 2·73	+ 3·0527	+0·0079		1198
1199	5 Coronae ... ... α	2·2	...	01·19	26	15 30 27·18	+ 2·5303	+0·0024	+0·0085	1199
1200	Serpentis	6·7	...	97·50	3	15 30 44·49	+ 3·0437	+0·0077		1200
1201	Serpentis	7·0	1	98·94	4	15 34 0·76	+ 3·0015	+0·0070		1201
1202	Serpentis	7·4	...	98·77	3	15 36 55·00	+ 3·0580	+0·0078		1202
1203	Serpentis	9·0	1	97·45	3	15 37 22·04	+ 3·0039	+0·0070		1203
1204	Serpentis	7·5	1	97·15	3	15 37 55·52	+ 2·9886	+0·0068		1204
1205	Serpentis	7·7*	...	01·44	4	15 38 43·92	+ 3·0202	+0·0073		1205
1206	23 Serpentis ... ... ψ	6·7	1	99·44	3	15 38 59·96	+ 3·0186	+0·0072	−0·0063	1206
1207	24 Serpentis ... ... α	2·8	...	01·53	27	15 39 20·44	+ 2·9436	+0·0062	+0·0079	1207
1208	Serpentis	7·2	...	99·45	3	15 39 30·20	+ 3·0023	+0·0070		1208
1209	Serpentis	6·5	...	99·47	3	15 40 34·02	+ 3·0496	+0·0077		1209
1210	Serpentis	7·2	...	99·46	3	15 42 10·99	+ 3·0719	+0·0080	−0·0168	1210
1211	Serpentis	7·0	1	98·81	3	15 42 22·61	+ 3·0370	+0·0074		1211
1212	35 Serpentis ... ... κ	4·3	...	02·68	3	15 44 14·28	+ 2·7027	+0·0039	−0·0039	1212
1213	Coronae ... ... R	Var.	3	97·16	3	15 44 27·14	+ 2·4711	+0·0027		1213
1214	34 Serpentis ... ... ω	5·5	...	97·51	3	15 45 14·57	+ 3·0241	+0·0072	+0·0031	1214
1215	37 Serpentis ... ... ϵ	3·0	1	00·61	27	15 45 49·77	+ 2·9796	+0·0066	+0·0068	1215

1178. Light orange. 1179. Harvard magnitude, 5·4; B.D., 5·3. 1187. 1897 June 10, mag. 9; 1897 June 23, reddish, mag. 8·3. The limits are 7·6 and about 12·5; the period is 368 days. 1191. Slightly red. 1198. A star (Albany 5243) follows, magnitude 9·3. 1207. Reddish. 1213. 1896 April 29, mag. 6·0; 1897 July 3 and 1897 July 13, mag. about 6. The limits are 5·8 and 13·0; the period is irregular.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1171	99·42	3	85 22 43·5	+14·118	−0·316			27489	1105	5134			+ 4 2964	1171
1172	99·43	3	84 3 43·7	+14·096	−0·314			27496	1112				+ 6 2995	1172
1173	97·44	3	87 15 4·1	+14·051	−0·321			27507	1123	5141			+ 2 2915	1173
1174	99·43	3	84 6 59·3	+14·010	−0·316			27541	1141				+ 6 3001	1174
1175	98·92	4	85 45 6·3	+13·901	−0·321			27599	19	5148			+ 4 2970	1175
1176	02·86	3	86 25 42·4	+13·777	−0·325				54	5155			+ 3 2991	1176
1177	97·78	3	109 24 47·7	+13·770	−0·368	+0·042	1927	27649			3920	3829	−19 4047	1177
1178	00·79	18	2 22 56·2	+13·589	+2·199	−0·031						3855	+87 143	1178
1179	02·86	3	84 41 21·4	+13·533	−0·327	−0·003	1932	27790	131				+ 5 2985	1179
1180	97·47	3	89 15 27·9	+13·500	−0·336	−0·002	1933	27800	136	5174			+ 0 3327	1180
1181	99·09	3	88 49 47·4	+13·491	−0·335	+0·102		27808	140	5176			+ 1 3052	1181
1182	00·81	3	99 0 49·6	+13·442	−0·355	+0·017	1934	27821	154		3943	3851	− 8 3935	1182
1183	99·43	3	88 41 39·4	+13·334	−0·338			27885	186	5183			+ 1 3059	1183
1184	98·21	4	87 51 22·0	+13·273	−0·338	+0·528	1937	27917		5186		3857	+ 2 2944	1184
1185	02·86	3	86 18 16·0	+13·241	−0·335			27939	216	5189			+ 3 3009	1185
1186	97·16	3	88 55 15·4	+13·159	−0·342	+0·098	1940	27974	233	5190			+ 1 3067	1186
1187	97·12	3	75 19 33·8	+13·091	−0·316			28014				3869	+14 2864	1187
1188	99·93	4	104 46 37·3	+13·059	−0·375	−0·013	1941	28000	256		3966	3874	−14 4188	1188
1189	03·21	3	88 12 49·4	+13·044	−0·342	+0·344			268	5192			+ 1 3071	1189
1190	98·77	3	89 10 42·2	+13·028	−0·345			28033	274	5194			+ 0 3349	1190
1191	98·61	6	106 22 3·8	+12·713	−0·386	+0·046	1949	28160			3986	3904	−16 4089	1191
1192	97·80	3	89 2 47·0	+12·656	−0·351				388	5213			+ 1 3084	1192
1193	98·78	3	87 48 38·4	+12·647	−0·349	+0·039	1952	28200	394	5216			+ 2 2965	1193
1194	99·09	3	88 46 24·0	+12·440	−0·354	+0·095		28283	443	5230			+ 1 3092	1194
1195	02·40	3	86 20 20·4	+12·325	−0·351			28337	478	5234			+ 3 3048	1195
1196	02·86	3	84 56 1·9	+12·237	−0·349			28370	501				+ 5 3037	1196
1197	97·47	3	87 59 45·5	+12·205	−0·356			28381	505	5239		3929	+ 2 2977	1197
1198	02·98	3	88 55 10·6	+12·204	−0·358					5240			+ 1 3098	1198
1199	00·70	8	62 56 55·2	+12·176	−0·298	+0·094	1973	28417			4022	3933	+27 2512	1199
1200	97·50	3	88 26 23·6	+12·155	−0·358			28401		5245			+ 1 3101	1200
1201	98·94	4	86 12 16·6	+11·926	−0·357			28513	603	5253			+ 3 3061	1201
1202	98·77	3	89 13 18·8	+11·721	−0·367			28598	660	5262			+ 0 3389	1202
1203	97·45	3	86 22 25·8	+11·689	−0·361				671	5264			+ 3 3077	1203
1204	97·15	3	85 34 44·6	+11·650	−0·360				681	5266			+ 4 3051	1204
1205	01·11	3	87 14 34·2	+11·592	−0·364			28664	699	5267			+ 2 2987	1205
1206	99·44	3	87 9 50·6	+11·573	−0·365	+0·145	1989	28673	707	5269			+ 2 2989	1206
1207	00·42	3	83 15 35·2	+11·549	−0·356	−0·056	1990	28690	712		4064	3974	+ 6 3088	1207
1208	99·45	3	86 18 47·1	+11·537	−0·363				715	5273			+ 3 3080	1208
1209	99·47	3	88 47 44·9	+11·461	−0·370					5278			+ 1 3125	1209
1210	99·46	3	89 57 33·4	+11·344	−0·374	+0·045		28754			4074		+ 0 3401	1210
1211	98·81	3	88 8 37·4	+11·330	−0·370				773	5285			+ 1 3131	1211
1212	02·49	3	71 32 58·9	+11·196	−0·332	+0·083	2002	28823			4081	3986	+18 3074	1212
1213	97·16	3	61 32 11·4	+11·180	−0·304			28843					+28 2477	1213
1214	97·51	3	87 29 54·5	+11·123	−0·372	+0·055	2003	28841	829	5299			+ 2 3007	1214
1215	98·18	7	85 13 16·9	+11·080	−0·367	−0·059	2005	28854	842	5301	4089	3996	+ 4 3069	1215

1178. Authority for Proper Motions: Thackeray. 1181, 1210. Authority for Proper Motions: Porter.
1189, 1194. Authority for Proper Motions: Boss.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Process.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1216	Serpentis ... ... R	Var.	5	03·14	3	15 46 5·06	+2·7648	+0·0044	−0·0030	1216
1217	41 Serpentis ... ... γ	3·7	1	00·54	30	15 51 49·96	+2·7480	+0·0043	+0·0194	1217
1218	Serpentis	8·9	2	02·63	3	15 52 14·41	+2·9994	+0·0068		1218
1219	Serpentis	7·9	1	02·63	3	15 52 14·82	+2·9995	+0·0068		1219
1220	Serpentis	7·1	...	01·98	3	15 53 31·26	+2·9723	+0·0065		1220
1221	7 Scorpii ... ... δ	2·7	...	01·76	7	15 54 25·07	+3·5416	+0·0158	−0·0018	1221
1222	Serpentis	7·3	1	03·20	3	15 54 56·37	+3·0547	+0·0074		1222
1223	Coronae ... ... T	Var.	3	98·78	3	15 55 18·93	+2·5098	+0·0031		1223
1224	Serpentis	5·9	...	97·17	3	15 55 53·19	+2·9784	+0·0065	−0·0047	1224
1225	Scorpii	4·9	...	98·44	3	15 57 17·85	+3·6232	+0·0173	−0·0075	1225
1226	Serpentis	7·3	1	97·50	3	15 59 23·78	+3·0536	+0·0073		1226
1227	8 Scorpii ... ... β^1	3·0	...	00·50	30	15 59 37·23	+3·4830	+0·0141	−0·0026	1227
1228	Scorpii ... ... β^2	5·2	...	02·87	3	15 59 37·63	+3·4829	+0·0141	−0·0026	1228
1229	Serpentis	7·5	...	00·77	5	16 1 10·99	+3·0325	+0·0070		1229
1230	Serpentis	6·7	1	98·45	3	16 3 59·08	+2·9967	+0·0066		1230
1231	Serpentis	6·8	...	99·44	3	16 4 35·94	+3·0506	+0·0071		1231
1232	Serpentis	6·6	...	99·12	3	16 5 8·30	+3·0346	+0·0069		1232
1233	Serpentis	7·5	1	02·46	3	16 8 3·41	+3·0782	+0·0074		1233
1234	Scorpii	6·0	...	98·44	3	16 8 49·62	+3·6298	+0·0160	−0·0038	1234
1235	1 Ophiuchi ... ... δ	3·1	...	99·66	27	16 9 6·19	+3·1438	+0·0081	−0·0049	1235
1236	Serpentis	7·1	...	96·85	3	16 9 20·44	+3·0127	+0·0066		1236
1237	Serpentis	7·2	2	96·51	3	16 12 39·46	+3·0365	+0·0068		1237
1238	2 Ophiuchi ... ... ε	3·3	...	99·51	5	16 13 1·71	+3·1656	+0·0082	+0·0040	1238
1239	Scorpii	6·2	...	98·44	3	16 13 16·18	+3·5069	+0·0132		1239
1240	50 Serpentis ... ... σ	5·9	2	96·52	3	16 17 0·27	+3·0462	+0·0067	−0·0131	1240
1241	Serpentis	7·0	1	98·24	4	16 17 13·92	+3·0072	+0·0063		1241
1242	20 Herculis ... ... γ	3·8	...	00·10	19	16 17 30·46	+2·6485	+0·0039	−0·0049	1242
1243	Ophiuchi	7·0	1	96·52	3	16 21 19·51	+3·0147	+0·0063		1243
1244	Ophiuchi	7·0	1	97·48	3	16 21 47·78	+3·0180	+0·0063		1244
1245	Ophiuchi	6·6	...	98·83	3	16 22 31·22	+3·0069	+0·0062		1245
1246	21 Scorpii ... ... α	1·3	...	99·81	9	16 23 16·39	+3·6731	+0·0149	−0·0022	1246
1247	Ophiuchi	5·4	...	96·83	3	16 23 28·15	+3·0538	+0·0066		1247
1248	Ophiuchi	7·3	1	99·47	3	16 23 30·39	+3·0342	+0·0064		1248
1249	Ophiuchi	7·0	1	99·47	3	16 23 35·66	+3·0667	+0·0067	−0·0060	1249
1250	Scorpii	6·3	1	98·47	3	16 25 14·38	+3·6782	+0·0147	−0·0043	1250
1251	10 Ophiuchi ... ... λ	3·8	...	98·56	10	16 25 52·09	+3·0256	+0·0062	−0·0027	1251
1252	27 Herculis ... ... β	2·9	...	02·92	3	16 25 55·25	+2·5847	+0·0036	−0·0090	1252
1253	23 Scorpii ... ... τ	2·8	...	98·48	4	16 29 39·22	+3·7292	+0·0149	−0·0022	1253
1254	Ophiuchi	8·0*	...	03·16	3	16 30 59·79	+3·0384	+0·0062	−0·0098	1254
1255	13 Ophiuchi ... ... ζ	2·6	...	98·97	23	16 31 39·02	+3·2993	+0·0087	−0·0007	1255
1256	Ophiuchi	7·0	...	99·13	3	16 32 1·22	+3·0629	+0·0063	+0·0050	1256
1257	36 Herculis ... ... m^1	7·3	1	02·85	3	16 35 37·20	+2·9767	+0·0055	−0·0018	1257
1258	37 Herculis ... ... m^2	6·3	1	96·52	3	16 35 40·73	+2·9764	+0·0055	−0·0025	1258
1259	Ophiuchi	6·6	...	97·85	3	16 36 12·30	+3·0414	+0·0060	−0·0013	1259
1260	38 Herculis	7·5	1	99·47	3	16 36 33·68	+2·9620	+0·0054	−0·0004	1260

1216. 1902 May 23, mag. 8·8; 1902 June 2, mag. 9·3; 1903 June 22, mag. about 9·5; 1903 July 1, mag. 8·9; 1903 July 6, mag. about 8·5. The limits are 5·6 and 13; the period is 357 days. 1222. Reddish. 1223. 1898 June 20, mag. 9·7; 1898 June 22, mag. 9·3; 1899 May 29, mag. about 9. Chandler's limits are 2·0 and 9·5. This star is the Nova Coronae of 1866. 1227, 1228. The magnitudes of these stars in the Harvard Photometry (Annals, vol. xiv) should be interchanged. 1235. Red. 1240. Harvard magnitude, 4·8; B.D., 5·0. 1248. B.D. magnitude, 8·3; Albany, 7·4.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1216	03·14	3	74 33 45·9	+11·061	−0·341	+0·050							+15 2918	1216
1217	97·81	6	74 0 42·5	+10·638	−0·344	+1·286	2023				4123	4021	+16 2849	1217
1218	02·63	3	86 18 11·4	+10·608	−0·376				948	5322			+ 3 3104	1218
1219	02·63	3	86 18 20·0	+10·608	−0·376			29036	949	5323			+ 3 3104	1219
1220	01·98	3	84 57 30·2	+10·513	−0·374			29073	973				+ 5 3117	1220
1221	02·90	3	112 20 12·1	+10·446	−0·445	+0·028	2024	29072			4131	4029	−22 4068	1221
1222	03·20	3	89 5 34·1	+10·407	−0·385			29106	996	5332			+ 1 3154	1222
1223	98·78	3	63 47 46·3	+10·378	−0·318								+26 2765	1223
1224	97·17	3	85 17 34·0	+10·336	−0·377	−0·077	2031	29138	1015	5336			+ 4 3096	1224
1225	98·44	3	115 35 12·2	+10·230	−0·459	+0·053								1225
1226	97·50	3	89 3 3·5	+10·072	−0·389			29252	1080	5351			+ 1 3160	1226
1227	00·80	3	109 31 54·0	+10·055	−0·444	+0·027	2034	29228			4155	4045	−19 4307	1227
1228	02·00	3	109 31 42·0	+10·054	−0·444	+0·027		29231			4156	4046	−19 4308	1228
1229	99·43	3	88 1 4·0	+ 9·936	−0·388			29325	1122	5356			+ 2 3042	1229
1230	98·45	3	86 16 51·8	+ 9·723	−0·386			29424		5364			+ 3 3132	1230
1231	99·44	3	88 54 58·3	+ 9·675	−0·394			29441	24	5368			+ 1 3168	1231
1232	99·45	4	88 8 6·5	+ 9·634	−0·392			29457	40	5372			+ 1 3170	1232
1233	02·46	3	90 15 45·9	+ 9·409	−0·401			29545			4198		− 0 3078	1233
1234	98·44	3	115 13 23·3	+ 9·350	−0·472	+0·013						4085		1234
1235	97·32	5	93 26 12·4	+ 9·329	−0·410	+0·137	2065	29573	116		4209	4088	− 3 3903	1235
1236	96·85	3	87 5 52·3	+ 9·310	−0·393				125	5387			+ 3 3151	1236
1237	96·51	3	88 15 26·5	+ 9·052	−0·399			29687	190	5397			+ 1 3194	1237
1238	99·52	3	94 26 54·8	+ 9·023	−0·416	−0·034	2073	29691	193		4226	4100	− 4 4086	1238
1239	98·44	3	109 58 26·4	+ 9·004	−0·461			29683			4228	4103	−19 4357	1239
1240	96·52	3	88 44 9·7	+ 8·711	−0·404	−0·035	2081			5420		4121	+ 1 3215	1240
1241	98·24	4	86 53 18·5	+ 8·693	−0·399			29797	280	5424			+ 3 3173	1241
1242	99·11	8	70 36 43·5	+ 8·672	−0·352	−0·048	2084	29830			4244	4123	+19 3086	1242
1243	96·52	3	87 15 57·0	+ 8·369	−0·403			29915	358	5448			+ 2 3103	1243
1244	97·48	3	87 25 32·5	+ 8·332	−0·404			29929	367	5451			+ 2 3106	1244
1245	98·83	3	86 54 17·2	+ 8·274	−0·403			29959	383	5453			+ 3 3199	1245
1246	98·87	3	116 12 36·2	+ 8·214	−0·492	+0·028	2091	29943			4273	4149		1246
1247	96·83	3	89 6 39·1	+ 8·198	−0·410				394	5457			+ 0 3529	1247
1248	99·47	3	88 11 27·8	+ 8·195	−0·407				395	5458			+ 1 3239	1248
1249	99·47	3	89 43 14·5	+ 8·188	−0·412	+0·100		29981	397		4275		+ 0 3530	1249
1250	98·47	3	116 19 11·1	+ 8·057	−0·495	+0·016						4153		1250
1251	98·81	3	87 47 50·3	+ 8·006	−0·408	+0·065	2097	30048	440	5473	4287	4159	+ 2 3118	1251
1252	02·83	6	68 17 33·6	+ 8·002	−0·349	+0·015	2100	30062			4288	4161	+21 2934	1252
1253	98·48	4	118 0 28·8	+ 7·702	−0·506	+0·023	2103				4307	4174		1253
1254	03·16	3	88 24 40·1	+ 7·593	−0·413	+0·095		30193		5496			+ 1 3263	1254
1255	98·93	7	100 21 51·9	+ 7·540	−0·449	−0·035	2109	30198	546		4312	4181	−10 4350	1255
1256	99·13	3	89 32 41·6	+ 7·510	−0·417	−0·040			560				+ 0 3553	1256
1257	02·85	3	85 35 51·0	+ 7·217	−0·408	−0·003	2116	30335	642	5516			+ 4 3234	1257
1258	96·52	3	85 35 6·8	+ 7·212	−0·408	+0·010	2117	30339	643	5517			+ 4 3235	1258
1259	97·85	3	88 33 39·1	+ 7·169	−0·417	+0·040	2119	30351	655	5520			+ 1 3286	1259
1260	99·47	3	84 56 5·4	+ 7·140	−0·407	−0·013	2121	30374	665	5523			+ 5 3254	1260

1216. Authority for Proper Motions: Auwers (Berlin A). 1225, 1234, 1250. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 1228. Authority for Proper Motions: Radcliffe, 1890, 4156. 1249. Authority for Proper Motions: Radcliffe, 1890, 4275. 1254. Authority for Proper Motions: Porter. 1256. The Proper Motions have been specially computed for the present catalogue.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1261	14 Ophiuchi	6·2	2	99·47	3	16 36 38·48	+3·0428	+0·0060	−0·0096	1261
1262	40 Herculis ζ	2·9	...	00·83	7	16 37 30·97	+2·2975	+0·0033	−0·0356	1262
1263	Ophiuchi	7·8*	...	99·15	3	16 38 3·43	+2·9930	+0·0056		1263
1264	41 Herculis	6·7	1	96·52	3	16 40 7·67	+2·9344	+0·0051	−0·0157	1264
1265	16 Ophiuchi	6·0	...	96·89	3	16 40 24·71	+3·0463	+0·0059	+0·0007	1265
1266	Ophiuchi	7·1	...	02·55	3	16 40 59·72	+2·9798	+0·0054		1266
1267	Ophiuchi	7·3	1	98·49	3	16 41 51·00	+3·0194	+0·0056	−0·0104	1267
1268	19 Ophiuchi	7·0	1	97·22	3	16 42 7·12	+3·0233	+0·0056	−0·0030	1268
1269	Ophiuchi	7·3	1	97·82	3	16 43 9·06	+3·0448	+0·0057		1269
1270	21 Ophiuchi	5·5	...	97·49	3	16 46 20·60	+3·0420	+0·0056	−0·0009	1270
1271	Ophiuchi	6·8	...	99·13	3	16 47 56·31	+3·0687	+0·0057	−0·0477	1271
1272	Ophiuchi	7·3	1	96·52	3	16 49 15·24	+2·8802	+0·0045		1272
1273	Ophiuchi	8·0*	...	02·76	3	16 51 1·53	+3·0375	+0·0054		1273
1274	27 Ophiuchi κ	3·5	...	99·26	19	16 52 56·02	+2·8578	+0·0043	−0·0212	1274
1275	Ophiuchi	8·5*	...	02·85	3	16 53 52·04	+2·9804	+0·0049		1275
1276	22 Ursae Minoris ε	4·4	...	03·06	3	16 56 12·25	−6·3133	+0·3156	+0·0090	1276
1277	58 Herculis ε	3·8	...	98·47	8	16 56 27·76	+2·2980	+0·0032	−0·0047	1277
1278	Ophiuchi	7·0	1	98·50	3	16 58 34·03	+3·0728	+0·0052		1278
1279	Ophiuchi	6·0	1	96·52	3	17 0 11·27	+3·0536	+0·0050	0·0000	1279
1280	Ophiuchi	6·3	...	98·18	3	17 0 13·49	+3·5795	+0·0089	−0·0048	1280
1281	Ophiuchi	7·2	...	96·55	3	17 0 23·84	+2·9920	+0·0047		1281
1282	Herculis	6·3	...	97·51	3	17 2 2·01	+1·8251	+0·0042		1282
1283	Ophiuchi	7·2	...	01·56	3	17 3 24·57	+2·9693	+0·0045	−0·0050	1283
1284	35 Ophiuchi η	2·6	...	00·20	14	17 4 38·50	+3·4351	+0·0072	+0·0003	1284
1285	Ophiuchi	6·9	...	99·50	3	17 5 9·41	+3·0589	+0·0048		1285
1286	Ophiuchi	6·1	...	98·52	3	17 6 9·26	+3·7535	+0·0098		1286
1287	Ophiuchi	6·8	1	97·54	3	17 6 26·37	+2·9632	+0·0043		1287
1288	Ophiuchi	6·5	...	98·83	3	17 7 47·76	+3·0619	+0·0047		1288
1289	22 Draconis ζ	3·2	...	02·74	3	17 8 29·74	+0·1679	+0·0192	−0·0027	1289
1290	64 Herculis α^1	Var.	...	00·39	16	17 10 5·17	+2·7351	+0·0035	−0·0019	1290
1291	Ophiuchi	6·7	1	96·53	3	17 11 11·84	+3·0203	+0·0044		1291
1292	Ophiuchi U	Var.	...	96·89	3	17 11 27·18	+3·0426	+0·0044		1292
1293	Ophiuchi	6·6	1	99·49	3	17 12 33·81	+3·0305	+0·0043		1293
1294	Ophiuchi	6·8	...	00·59	3	17 13 5·01	+2·9983	+0·0042		1294
1295	Herculis	Neb.	...	99·19	3	17 14 3·28	+1·8406	+0·0039		1295
1296	Ophiuchi	6·9	2	99·50	3	17 14 43·90	+3·0214	+0·0042		1296
1297	Ophiuchi	8·1*	...	01·59	3	17 14 52·24	+3·0778	+0·0044		1297
1298	42 Ophiuchi θ	3·3	...	99·88	11	17 15 51·99	+3·6818	+0·0078	−0·0024	1298
1299	Ophiuchi	7·0	...	98·91	3	17 16 4·09	+3·0375	+0·0042	−0·0100	1299
1300	Ophiuchi	7·4	...	98·88	3	17 16 5·75	+2·9644	+0·0039		1300
1301	Ophiuchi	7·0	1	99·19	3	17 17 8·16	+2·9555	+0·0039		1301
1302	Ophiuchi	7·3	1	99·52	3	17 17 56·67	+3·0512	+0·0042		1302
1303	Ophiuchi	7·4	...	99·64	3	17 20 30·06	+2·9945	+0·0038		1303
1304	Ophiuchi	6·3	...	96·88	3	17 20 43·82	+3·7111	+0·0073		1304
1305	Ophiuchi	8·0*	...	01·57	3	17 20 46·71	+3·0214	+0·0039	−0·0404	1305

1268. Harvard magnitude, 6·0; B.D., 6·6. 1274. Orange-red. 1290. Red. The limits of magnitude are 3·1 and 3·9; the period is irregular. The companion follows south, and is blue. 1292. The limits of magnitude are 6·0 and 6·7; the period is 20 hours. 1295. A faint nebula with two or more nuclei. Difficult to observe.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1261	99·47	3	88 37 40·5	+7·134	−0·418	−0·025	2120	30373	664	5524			+ 1 3290	1261
1262	01·87	3	58 12 58·3	+7·062	−0·317	−0·410	2127	30433			4344	4195	+31 2884	1262
1263	99·15	3	86 21 23·1	+7·018	−0·412			30416	689	5533			+ 3 3254	1263
1264	96·52	3	83 43 12·4	+6·848	−0·405	+0·274	2130	30480	731				+ 6 3288	1264
1265	96·89	3	88 47 46·2	+6·824	−0·421	−0·009	2129	30483	734	5541			+ 1 3298	1265
1266	02·55	3	85 46 30·9	+6·776	−0·412			30501	745	5545			+ 4 3250	1266
1267	98·49	3	87 34 40·4	+6·706	−0·418	−0·060	2134	30527		5551			+ 2 3174	1267
1268	97·22	3	87 45 18·8	+6·684	−0·419	+0·015	2135	30535		5553		4207	+ 2 3175	1268
1269	97·82	3	88 43 53·7	+6·599	−0·422				780	5559			+ 1 3309	1269
1270	97·49	3	88 36 48·9	+6·334	−0·424	+0·002	2140	30656	848	5575			+ 1 3323	1270
1271	99·13	3	89 49 7·8	+6·201	−0·428	+1·490		30694	873		4385		+ 0 3593	1271
1272	96·52	3	81 24 12·3	+6·092	−0·403			30748					+ 8 3298	1272
1273	02·76	3	88 25 9·6	+5·944	−0·426			30790	925	5586			+ 1 3346	1273
1274	97·81	8	80 28 10·1	+5·785	−0·402	−0·015	2156	30861			4409	4242	+ 9 3298	1274
1275	02·85	3	85 52 50·3	+5·706	−0·419			30875	977	5597			+ 4 3301	1275
1276	02·81	6	7 47 52·5	+5·510	+0·883	+0·003	2201				4430	4262	+82 498	1276
1277	01·76	3	58 55 34·9	+5·488	−0·325	−0·032	2161	30996			4425	4257	+31 2947	1277
1278	98·50	3	90 0 14·5	+5·311	−0·434			31022	1062		4434		+ 0 3624	1278
1279	96·52	3	89 9 1·4	+5·174	−0·432	+0·360		31065	1089	5634			+ 0 3629	1279
1280	95·55	3	111 25 33·4	+5·171	−0·507	+0·098	2162	31046			4445	4276	−21 4512	1280
1281	96·55	3	86 25 26·7	+5·156	−0·424				1099	5638			+ 3 3338	1281
1282	97·51	3	46 3 7·2	+5·018	−0·260			31192					+44 2652	1282
1283	01·56	3	85 26 21·7	+4·901	−0·422	+0·203		31173	1160	5663			+ 4 3336	1283
1284	01·57	3	105 36 4·3	+4·797	−0·488	−0·097	2171	31191			4464	4287	−15 4467	1284
1285	99·50	3	89 23 33·4	+4·753	−0·435			31231	26				+ 0 3649	1285
1286	98·52	3	117 38 19·9	+4·668	−0·534			31226				4292		1286
1287	97·54	3	85 11 11·2	+4·643	−0·422			31272	51	5682			+ 4 3349	1287
1288	98·83	3	89 31 33·6	+4·528	−0·437				79			4299	+ 0 3654	1288
1289	02·85	6	24 9 44·3	+4·469	−0·026	−0·022	2193	31445			4480	4302	+65 1170	1289
1290	99·59	4	75 29 44·0	+4·333	−0·391	−0·030	2183	31365	125		4486	4307	+14 3207	1290
1291	96·53	3	87 42 6·0	+4·238	−0·432			31384		5708		4312	+ 2 3283	1291
1292	96·89	3	88 40 40·1	+4·216	−0·436			31392	143	5710			+ 1 3408	1292
1293	99·49	3	88 8 55·9	+4·121	−0·434			31422	170	5718		4323	+ 1 3411	1293
1294	00·59	3	86 44 48·9	+4·076	−0·430			31440		5721			+ 3 3379	1294
1295	99·19	3	46 45 23·3	+3·993	−0·265			31544				4327	+43 2711	1295
1296	99·50	3	87 45 27·9	+3·935	−0·434			31494	209	5732		4328	+ 2 3296	1296
1297	01·59	3	90 13 19·7	+3·923	−0·442			31496					− 0 3265	1297
1298	01·77	3	114 53 58·5	+3·838	−0·529	+0·035	2189	31495			4517	4336		1298
1299	98·91	3	88 27 51·9	+3·820	−0·437	−0·260		31546	237	5738			+ 1 3421	1299
1300	98·88	3	85 16 48·3	+3·818	−0·426			31569		5739			+ 4 3398	1300
1301	99·19	3	84 53 59·1	+3·728	−0·425			31588		5750			+ 5 3378	1301
1302	99·52	3	89 3 51·4	+3·659	−0·439				271	5756			+ 0 3678	1302
1303	99·64	3	86 35 58·2	+3·439	−0·432				315	5764			+ 3 3404	1303
1304	96·82	4	115 51 18·3	+3·419	−0·535			31671				4348		1304
1305	01·57	3	87 45 59·9	+3·415	−0·435	+1·156			322	5766			+ 2 3312	1305

1264, 1271, 1279, 1283. Authority for Proper Motions: Bossert. 1299. Authority for Proper Motions: Porter.
1305. Authority for Proper Motions: Boss.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1306	Ophiuchi	7·0	...	99·51	3	17 21 26·15	+3·0518	+0·0040		1306
1307	49 Ophiuchi ... ... σ	4·4	...	99·74	15	17 21 33·11	+2·9753	+0·0037	−0·0017	1307
1308	Ophiuchi	5·1	...	98·54	3	17 23 43·55	+3·0633	+0·0039		1308
1309	Ophiuchi	6·0	...	97·84	3	17 25 31·71	+3·7229	+0·0067	−0·0020	1309
1310	Ophiuchi	7·1	...	98·52	3	17 25 46·75	+3·0451	+0·0037		1310
1311	Ophiuchi	5·8	1	99·25	3	17 26 20·45	+3·0080	+0·0036		1311
1312	Ophiuchi	7·2	...	99·59	3	17 26 27·42	+3·0324	+0·0037		1312
1313	76 Herculis ... ... λ	4·7	...	02·55	4	17 26 41·77	+2·4223	+0·0028	−0·0002	1313
1314	Ophiuchi	7·0	1	00·51	4	17 26 50·41	+3·0700	+0·0037		1314
1315	Ophiuchi	7·7	1	99·55	3	17 27 2·08	+3·0058	+0·0036		1315
1316	Herculis	6·5	...	97·56	3	17 27 19·80	+2·0028	+0·0031		1316
1317	Ophiuchi	9·5	2	99·59	3	17 28 3·55	+3·0037	+0·0035		1317
1318	Ophiuchi	8·0*	...	99·64	3	17 29 40·78	+2·9762	+0·0034		1318
1319	55 Ophiuchi ... ... α	2·1	...	99·68	14	17 30 17·45	+2·7756	+0·0030	+0·0066	1319
1320	Ophiuchi	8·3	1	00·61	3	17 30 45·40	+3·0482	+0·0035		1320
1321	Ophiuchi	8·6	1	00·61	3	17 30 45·57	+3·0482	+0·0035		1321
1322	Ophiuchi	6·3	1	96·58	3	17 34 5·57	+3·0243	+0·0033		1322
1323	Ophiuchi	7·0	1	97·91	3	17 34 19·01	+2·9888	+0·0032	−0·0129	1323
1324	Ophiuchi	6·8	...	98·59	3	17 34 31·70	+2·9926	+0·0032		1324
1325	Ophiuchi	7·0	1	99·51	3	17 36 58·60	+2·9700	+0·0030		1325
1326	Draconis	7·7*	...	99·58	3	17 37 0·53	−0·3118	+0·0138		1326
1327	28 Draconis ... ... ω	4·9	...	99·61	3	17 37 32·21	−0·3580	+0·0139	+0·0024	1327
1328	60 Ophiuchi ... ... β	3·0	...	00·23	19	17 38 31·91	+2·9654	+0·0030	−0·0041	1328
1329	Ophiuchi	8·0	1	99·62	3	17 39 3·53	+3·0634	+0·0031		1329
1330	61 Ophiuchi	6·3	1	99·52	3	17 39 32·68	+3·0117	+0·0030	−0·0005	1330
1331	Ophiuchi	6·6	1	99·52	3	17 39 34·00	+3·0117	+0·0030		1331
1332	Ophiuchi	6·3	1	96·89	3	17 41 19·91	+3·0475	+0·0029		1332
1333	86 Herculis ... ... μ	3·7	1	99·55	12	17 42 32·60	+2·3706	+0·0025	−0·0244	1333
1334	62 Ophiuchi ... ... γ	3·7	...	97·23	3	17 42 52·61	+3·0088	+0·0028	−0·0037	1334
1335	Ophiuchi	6·2	...	97·93	3	17 43 21·63	+2·9833	+0·0027		1335
1336	Ophiuchi	7·2	...	98·56	3	17 44 2·10	+2·9560	+0·0027		1336
1337	Ophiuchi	6·3	1	98·91	3	17 44 16·29	+3·0263	+0·0027	−0·0030	1337
1338	Ophiuchi	7·9	...	99·21	3	17 44 28·62	+3·0509	+0·0028		1338
1339	Ophiuchi	7·0	1	99·60	3	17 46 9·71	+2·9500	+0·0026		1339
1340	Ophiuchi	7·1	3	98·26	3	17 46 55·81	+3·0465	+0·0026		1340
1341	Ophiuchi	6·4	3	97·57	3	17 47 0·41	+3·0463	+0·0026		1341
1342	Ophiuchi	6·5	2	99·53	3	17 47 3·17	+2·9674	+0·0026		1342
1343	Ophiuchi	6·0	1	97·26	3	17 47 31·33	+3·0417	+0·0026		1343
1344	Ophiuchi	7·4	...	99·55	3	17 48 18·01	+3·0100	+0·0025		1344
1345	Ophiuchi	7·0	1	99·22	3	17 49 29·60	+2·9851	+0·0025		1345
1346	Sagittarii	5·7	...	97·55	3	17 50 22·87	+3·7844	+0·0031		1346
1347	Ophiuchi	6·7	...	97·57	3	17 50 35·00	+3·0239	+0·0024		1347
1348	Ophiuchi	5·7	...	98·95	3	17 51 12·62	+3·0567	+0·0024		1348
1349	89 Herculis	5·7	1	99·67	13	17 51 23·10	+2·4193	+0·0024	+0·0003	1349
1350	Ophiuchi	6·1	...	99·54	3	17 51 56·89	+3·0708	+0·0024		1350

1320, 1321. 1899 August 19, Second star slightly fainter than first; 1902 July 28, Second star slightly brighter than first.
1324. Orange. 1328, 1333. Orange-red. 1340. Blue. 1341. Light orange.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1306	99·51	3	89 5 25·9	+3·358	−0·440			31734	335	5771			+ 0 3690	1306
1307	98·99	7	85 46 21·4	+3·348	−0·429	−0·015	2206			5773	4546	4354	+ 4 3422	1307
1308	98·54	3	89 35 17·0	+3·161	−0·442			31804	376			4357	+ 0 3697	1308
1309	97·84	3	116 11 34·7	+3·005	−0·538	+0·034	3248	31832				4362		1309
1310	98·52	3	88 48 10·2	+2·983	−0·440			31877		5801			+ 1 3449	1310
1311	99·25	3	87 12 2·0	+2·934	−0·435			31898		5807			+ 2 3337	1311
1312	99·59	3	88 15 7·6	+2·924	−0·439			31905	443	5808			+ 1 3450	1312
1313	02·52	4	63 48 50·4	+2·904	−0·351	−0·022	2213	31950				4364	+26 3034	1313
1314	99·52	3	89 52 59·1	+2·891	−0·444			31900	446		4562		+ 0 3709	1314
1315	99·55	3	87 6 7·2	+2·874	−0·435			31924		5815			+ 2 3341	1315
1316	97·56	3	51 2 34·9	+2·849	−0·290			31990				4365	+39 3147	1316
1317	99·59	3	87 0 53·7	+2·785	−0·435				474	5821			+ 3 3440	1317
1318	99·64	3	85 49 59·7	+2·645	−0·431			32016	509	5831			+ 4 3448	1318
1319	00·38	3	77 22 1·9	+2·592	−0·402	+0·217	2218	32049	532		4580	4369	+12 3252	1319
1320	00·61	3	88 56 18·2	+2·552	−0·442				529	5842			+ 1 3463	1320
1321	00·61	3	88 56 17·8	+2·551	−0·442				529	5843			+ 1 3463	1321
1322	96·58	3	87 54 52·5	+2·262	−0·439			32176	619	5863		4382	+ 2 3373	1322
1323	97·91	3	86 23 8·4	+2·242	−0·434	+0·096		32204		5866			+ 3 3465	1323
1324	98·59	3	86 33 1·4	+2·224	−0·435			32206		5868			+ 3 3466	1324
1325	99·51	3	85 34 59·0	+2·011	−0·432			32288	673	5884			+ 4 3482	1325
1326	99·58	3	21 27 15·2	+2·008	+0·045			32482					+68 945	1326
1327	00·76	8	21 11 44·5	+1·962	+0·051	−0·308	2238	32502			4611	4402	+68 949	1327
1328	98·27	10	85 23 27·7	+1·876	−0·431	−0·167	2229	32346	705	5892	4618	4404	+ 4 3489	1328
1329	99·62	3	89 35 59·8	+1·830	−0·446				715				+ 0 3763	1329
1330	99·52	3	87 22 38·6	+1·787	−0·438	−0·016	2231	32378	729	5896			+ 2 3390	1330
1331	99·52	3	87 22 39·8	+1·785	−0·438			32380	730	5897			+ 2 3391	1331
1332	96·89	3	88 54 59·4	+1·631	−0·444			32438	769	5911			+ 1 3501	1332
1333	98·73	3	62 13 14·9	+1·526	−0·345	+0·745	2237	32519			4635	4410	+27 2888	1333
1334	97·23	3	87 15 18·3	+1·497	−0·438	+0·056	2236	32494	805	5925		4413	+ 2 3403	1334
1335	97·93	3	86 9 41·3	+1·455	−0·434			32514	815	5932			+ 3 3493	1335
1336	98·56	3	84 59 54·7	+1·396	−0·431			32545	827	5938			+ 5 3505	1336
1337	98·91	3	88 0 30·8	+1·375	−0·441	−0·080		32553	832	5940			+ 2 3406	1337
1338	99·21	3	89 3 43·4	+1·357	−0·444					5941			+ 0 3786	1338
1339	99·60	3	84 44 37·5	+1·210	−0·430				873				+ 5 3521	1339
1340	98·26	3	88 52 31·0	+1·143	−0·444			32644	886	5960			+ 1 3525	1340
1341	97·57	3	88 51 47·1	+1·136	−0·444			32649	892	5962			+ 1 3526	1341
1342	99·53	3	85 29 13·7	+1·132	−0·433			32662	901	5964			+ 4 3541	1342
1343	97·26	3	88 40 13·1	+1·091	−0·444			32679	912	5967			+ 1 3528	1343
1344	99·55	3	87 18 34·7	+1·023	−0·439			32705		5974			+ 2 3420	1344
1345	99·22	3	86 14 51·5	+0·919	−0·435			32749	959	5983			+ 3 3528	1345
1346	97·55	3	118 2 56·2	+0·841	−0·552			32727				4440		1346
1347	97·57	3	87 54 30·5	+0·824	−0·441			32792	981	5987			+ 2 3427	1347
1348	98·95	3	89 18 51·4	+0·769	−0·446			32812	998			4442	+ 0 3813	1348
1349	99·61	5	63 56 2·1	+0·754	−0·353	−0·009	2249				4677	4443	+26 3120	1349
1350	99·54	3	89 55 10·7	+0·704	−0·448				1014		4679		+ 0 3816	1350

1323. Authority for Proper Motions: Porter. 1337. The Proper Motions have been specially computed for the present catalogue.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1351	Sagittarii	5·9	...	97·91	3	17 52 18·28	+ 3·8056	+ 0·0028		1351
1352	Ophiuchi	7·1	3	99·55	3	17 52 48·84	+ 3·0199	+ 0·0023		1352
1353	Ophiuchi	7·2	...	99·23	3	17 53 2·13	+ 3·0090	+ 0·0023		1353
1354	35 Draconis	5·1	...	99·59	3	17 53 55·46	− 2·7045	+ 0·0142	+ 0·0135	1354
1355	33 Draconis ... ... γ	2·5	...	97·36	5	17 54 16·88	+ 1·3926	+ 0·0030	− 0·0017	1355
1356	Ophiuchi	6·7	1	98·65	3	17 55 9·70	+ 3·0579	+ 0·0022		1356
1357	66 Ophiuchi	4·8	...	97·58	3	17 55 18·60	+ 2·9705	+ 0·0022	− 0·0024	1357
1358	67 Ophiuchi	3·9	...	96·59	3	17 55 38·10	+ 3·0042	+ 0·0021	− 0·0004	1358
1359	68 Ophiuchi	4·5	...	98·58	3	17 56 40·72	+ 3·0422	+ 0·0021	− 0·0008	1359
1360	Ophiuchi	6·3	1	98·68	3	17 59 34·47	+ 3·0281	+ 0·0019		1360
1361	70 Ophiuchi	4·1	...	99·55	3	18 0 24·00	+ 3·0138	+ 0·0019	+ 0·0146	1361
1362	Ophiuchi	6·7	...	98·96	3	18 0 41·19	+ 2·9638	+ 0·0019	− 0·0020	1362
1363	Ophiuchi	7·3	1	99·55	3	18 0 44·98	+ 3·0265	+ 0·0019		1363
1364	Sagittarii	4·7	...	97·90	3	18 1 44·91	+ 3·7976	+ 0·0013	+ 0·0007	1364
1365	Ophiuchi	6·6	...	99·00	3	18 2 19·41	+ 3·0151	+ 0·0018	0·0000	1365
1366	72 Ophiuchi	3·7	...	98·50	10	18 2 36·44	+ 2·8478	+ 0·0019	− 0·0056	1366
1367	Ophiuchi	7·0	2	99·30	4	18 3 4·96	+ 3·0212	+ 0·0018		1367
1368	Ophiuchi	6·9	...	99·27	3	18 3 49·74	+ 3·0266	+ 0·0017		1368
1369	Ophiuchi	7·3	1	99·57	3	18 3 50·25	+ 3·0207	+ 0·0017		1369
1370	23 Ursae Minoris ... δ	4·5	...	99·17	35	18 4 32·82	− 19·5125	− 0·1264	+ 0·0245	1370
1371	73 Ophiuchi	5·6	...	99·30	3	18 4 35·53	+ 2·9799	+ 0·0017	+ 0·0013	1371
1372	Ophiuchi	6·7	1	99·02	3	18 4 53·78	+ 3·0001	+ 0·0017	0·0000	1372
1373	Serpentis	7·9*	...	99·64	3	18 5 17·80	+ 3·0605	+ 0·0016		1373
1374	Ophiuchi	5·7	...	98·95	3	18 5 40·50	+ 2·9955	+ 0·0017		1374
1375	Ophiuchi	7·7*	...	99·61	3	18 5 52·90	+ 2·9696	+ 0·0017		1375
1376	Ophiuchi	6·5	...	99·27	3	18 7 39·48	+ 3·0076	+ 0·0015		1376
1377	13 Sagittarii ... ... μ	4·0	...	01·08	4	18 7 46·93	+ 3·5879	+ 0·0007	− 0·0014	1377
1378	Ophiuchi	6·6	...	99·61	3	18 8 3·41	+ 3·0037	+ 0·0015		1378
1379	Ophiuchi	6·6	...	98·71	3	18 8 50·40	+ 3·0175	+ 0·0015		1379
1380	Serpentis	7·5	1	00·53	4	18 9 26·46	+ 3·0693	+ 0·0014		1380
1381	Ophiuchi	7·3	2	99·55	3	18 9 53·70	+ 2·9877	+ 0·0015		1381
1382	Ophiuchi	6·3	...	98·70	3	18 11 3·78	+ 3·0181	+ 0·0014		1382
1383	Sagittarii	5·0	1	97·62	3	18 11 47·56	+ 3·7552	− 0·0002		1383
1384	Serpentis	6·4	...	98·10	6	18 11 59·80	+ 3·0501	+ 0·0013		1384
1385	19 Sagittarii ... ... δ	2·9	...	97·58	3	18 14 35·43	+ 3·8389	− 0·0009	+ 0·0014	1385
1386	Ophiuchi	8·3*	...	97·29	3	18 14 58·15	+ 2·9722	+ 0·0012		1386
1387	Sagittarii	6·1	...	97·23	3	18 15 40·34	+ 3·7961	− 0·0009		1387
1388	74 Ophiuchi	5·0	1	99·59	3	18 15 52·45	+ 2·9951	+ 0·0011	− 0·0013	1388
1389	58 Serpentis ... ... η	3·5	...	99·15	31	18 16 8·07	+ 3·1409	+ 0·0008	− 0·0400	1389
1390	1 Lyrae ... ... κ	4·3	...	02·56	3	18 16 21·36	+ 2·1033	+ 0·0020	− 0·0021	1390
1391	Ophiuchi	9·0	2	97·26	3	18 18 12·96	+ 2·9697	+ 0·0011		1391
1392	Serpentis	8·5	1	99·61	3	18 19 0·08	+ 3·0391	+ 0·0009		1392
1393	Ophiuchi	6·6	...	98·62	3	18 20 13·21	+ 2·9555	+ 0·0010		1393
1394	Serpentis	7·0	1	98·72	3	18 20 57·60	+ 3·0559	+ 0·0008		1394
1395	Sagittarii	5·8	...	97·28	3	18 21 25·76	+ 3·8374	− 0·0020		1395

1355, 1389. Orange. 1361. Close double. Observed as one mass. 1373. A companion of about the ninth magnitude precedes, north. 1379, 1382. Reddish. 1391. A star (B.D. + 4° 3723), magnitude 9·5, precedes 2s or 3s and is north.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1351	97·91	3	118 44 52·5	+0·673	−0·555			32807				4447		1351
1352	99·55	3	87 44 6·8	+0·628	−0·440			32879	1031	6006			+ 2 3436	1352
1353	99·23	3	87 16 8·1	+0·609	−0·439				1040	6007			+ 2 3438	1353
1354	98·96	5	13 1 25·4	+0·531	+0·394	−0·239	2287	33292			4701	4455	+76 667	1354
1355	97·36	5	38 29 57·5	+0·500	−0·203	+0·028	2267	33043			4699	4454	+51 2282	1355
1356	98·65	3	89 21 53·3	+0·424	−0·446			32962					+ 0 3832	1356
1357	97·58	3	85 37 31·6	+0·410	−0·433	−0·020	2257		1100	6023			+ 4 3570	1357
1358	96·59	3	87 3 49·4	+0·382	−0·438	+0·013	2259	32984	1114	6025		4459	+ 2 3458	1358
1359	98·58	3	88 41 32·9	+0·290	−0·444	+0·003	2264	33027		6038			+ 1 3560	1359
1360	98·68	3	88 5 9·2	+0·037	−0·442			33141	1202	6066	4725		+ 1 3578	1360
1361	99·53	3	87 28 37·1	−0·035	−0·439	+1·109	2271	33169	1228-9	6073		4484	+ 2 3482	1361
1362	98·96	3	85 20 29·0	−0·060	−0·432	+0·290			1236	6076			+ 4 3589	1362
1363	99·55	3	88 1 14·8	−0·066	−0·441					6077			+ 1 3585	1363
1364	97·90	3	118 28 4·8	−0·153	−0·554	+0·061		33173				4488		1364
1365	99·00	3	87 31 51·1	−0·203	−0·440	−0·029	2272	33242	1269	6089			+ 2 3493	1365
1366	97·60	3	80 27 1·7	−0·228	−0·415	−0·089	2275		1282		4740	4496	+ 9 3564	1366
1367	99·30	4	87 47 40·8	−0·270	−0·440			33280	1295	6096			+ 2 3498	1367
1368	99·27	3	88 1 14·5	−0·335	−0·441			33309	3	6106			+ 1 3604	1368
1369	99·57	3	87 46 19·7	−0·336	−0·440			33310		6107			+ 2 3504	1369
1370	99·42	41	3 23 12·1	−0·398	+2·845	−0·040	2395				4764	4523	+86 269	1370
1371	99·30	3	86 1 24·5	−0·402	−0·434	+0·011	2277	33333		6116			+ 3 3610	1371
1372	99·02	3	86 53 34·0	−0·429	−0·437	+0·190			28	6121			+ 3 3613	1372
1373	99·64	3	89 28 31·7	−0·464	−0·446			33355	37				+ 0 3870	1373
1374	98·95	3	86 41 42·9	−0·496	−0·436			33376	46	6129			+ 3 3620	1374
1375	99·61	3	85 35 7·9	−0·515	−0·433					6130			+ 4 3633	1375
1376	99·27	3	87 12 42·7	−0·670	−0·438			33461		6145			+ 2 3528	1376
1377	01·61	3	111 5 6·5	−0·681	−0·523	−0·001	2284	33433			4759	4519	−21 4908	1377
1378	99·61	3	87 2 41·6	−0·705	−0·437			33476		6149			+ 2 3532	1378
1379	98·71	3	87 38 1·5	−0·773	−0·439			33498	120	6154			+ 2 3537	1379
1380	00·53	4	89 51 7·7	−0·826	−0·447			33515	136				+ 0 3892	1380
1381	99·55	3	86 21 24·8	−0·866	−0·435			33554	151	6162			+ 3 3643	1381
1382	98·70	3	87 39 16·6	−0·968	−0·439			33596	177	6167			+ 2 3547	1382
1383	97·62	3	117 4 42·7	−1·031	−0·546			33578				4536		1383
1384	98·10	6	89 1 43·4	−1·049	−0·444			33636	203	6172			+ 0 3907	1384
1385	97·58	3	119 52 14·5	−1·276	−0·558	+0·029	2294	33696				4544		1385
1386	97·29	3	85 41 17·9	−1·309	−0·432					6194			+ 4 3703	1386
1387	97·23	3	118 28 31·8	−1·370	−0·552			33738						1387
1388	99·59	3	86 40 3·2	−1·388	−0·435	+0·002	2299	33799	282	6199		4549	+ 3 3680	1388
1389	98·44	6	92 55 29·4	−1·410	−0·456	+0·677	2298	33802	302		4800	4550	− 2 4599	1389
1390	00·64	3	53 58 50·2	−1·430	−0·305	−0·035	2305	33879				4552	+36 3094	1390
1391	97·26	3	85 34 51·1	−1·592	−0·431				352	6210			+ 4 3724	1391
1392	99·61	3	88 33 8·5	−1·661	−0·441			33935		6214			+ 1 3663	1392
1393	98·62	3	84 58 13·6	−1·767	−0·429			34036		6223			+ 5 3730	1393
1394	98·72	3	89 16 35·6	−1·831	−0·443			34015					+ 0 3931	1394
1395	97·28	3	119 52 36·5	−1·873	−0·556							4573		1395

1358. Authority for Proper Motions: Auwers (Astronomische Nachrichten, 3929). 1362, 1372. Authority for Proper Motions: Porter. 1364. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1396	22 Sagittarii ... ... λ	2·9	...	98·58	13	18 21 47·89	+3·7068	−0·0015	−0·0052	1396
1397	59 Serpentis ... ... d	7·8†	...	98·70	3	18 22 5·36	+3·0696	+0·0007	−0·0018	1397
1398	59 Serpentis ... ... d	Var.	...	98·64	5	18 22 5·48	+3·0696	+0·0007	−0·0018	1398
1399	Ophiuchi	6·8	3	96·95	3	18 22 51·54	+2·9870	+0·0008		1399
1400	44 Draconis ... ... χ	3·7	...	99·60	3	18 22 51·72	−1·1951	−0·0145	+0·1129	1400
1401	Serpentis	7·3	2	96·94	3	18 25 7·04	+2·9798	+0·0007		1401
1402	Serpentis	7·3	2	98·27	3	18 25 44·21	+2·9695	+0·0007		1402
1403	Serpentis	6·8	2	97·57	3	18 27 7·82	+2·9895	+0·0006		1403
1404	Serpentis	7·7	3	99·61	3	18 28 28·56	+3·0304	+0·0004		1404
1405	Herculis	8·7	1	97·28	3	18 29 5·90	+2·5301	+0·0015	−0·0160	1405
1406	Serpentis	6·9	1	97·92	3	18 30 40·25	+2·9602	+0·0006		1406
1407	Serpentis	7·0	3	98·58	3	18 31 32·94	+2·9599	+0·0005		1407
1408	Serpentis	7·1	4	97·29	3	18 31 55·36	+2·9870	+0·0004		1408
1409	Serpentis	7·0	1	97·30	3	18 32 4·06	+3·0527	+0·0002		1409
1410	3 Lyrae ... ... α	0·1	...	99·81	11	18 33 33·05	+2·0136	+0·0016	+0·0173	1410
1411	Serpentis	6·8	1	98·62	3	18 33 43·59	+2·9624	+0·0004		1411
1412	Serpentis	6·7	3	98·31	3	18 34 41·52	+2·9530	+0·0004		1412
1413	Serpentis	7·7	3	99·61	3	18 36 20·46	+3·0618	−0·0001		1413
1414	Serpentis	7·2	3	97·99	3	18 36 22·93	+2·9696	+0·0003		1414
1415	2 Aquilae	5·5	1	99·44	20	18 36 47·85	+3·2852	−0·0011	−0·0004	1415
1416	Serpentis	7·8	2	99·61	3	18 38 27·71	+2·9878	+0·0001		1416
1417	27 Sagittarii ... ... φ	3·7	1	96·59	3	18 39 24·50	+3·7465	−0·0043	+0·0014	1417
1418	4 Aquilae	5·7	2	97·26	3	18 39 47·00	+3·0277	−0·0001	−0·0007	1418
1419	Serpentis	6·6	5	97·29	3	18 43 4·89	+2·9779	−0·0001		1419
1420	Aquilae	6·7	2	98·59	3	18 44 31·48	+3·0562	−0·0005		1420
1421	Herculis	8·0	2	97·98	3	18 45 22·71	+2·5207	+0·0012		1421
1422	Sagittarii	6·3	...	97·27	3	18 46 15·92	+3·8136	−0·0060		1422
1423	10 Lyrae ... ... β^2	Var.	1	00·41	10	18 46 23·25	+2·2143	+0·0015	−0·0007	1423
1424	Aquilae	7·7*	...	98·58	3	18 49 27·31	+3·0323	−0·0006		1424
1425	Aquilae	7·7*	...	98·58	3	18 49 33·28	+3·0326	−0·0006		1425
1426	Aquilae	7·6*	...	98·64	3	18 49 49·42	+3·0500	−0·0007		1426
1427	Serpentis	7·5	...	98·00	3	18 50 36·46	+2·9745	−0·0004		1427
1428	Aquilae	7·7	...	98·99	3	18 50 39·71	+3·0696	−0·0009		1428
1429	Serpentis	7·0	1	99·29	3	18 50 48·83	+2·9970	−0·0005		1429
1430	63 Serpentis ... ... θ	5·5	2	98·69	3	18 51 14·80	+2·9799	−0·0004	+0·0010	1430
1431	Serpentis	6·2	2	98·69	3	18 51 16·28	+2·9799	−0·0004	+0·0010	1431
1432	Serpentis	6·3	...	98·72	3	18 51 23·57	+3·0194	−0·0006		1432
1433	Serpentis	7·3	1	99·58	3	18 51 39·26	+2·9785	−0·0004	−0·0014	1433
1434	64 Serpentis	5·5	...	98·70	3	18 52 14·83	+3·0181	−0·0007	−0·0008	1434
1435	Aquilae	7·5	2	97·64	3	18 53 20·79	+3·0486	−0·0009		1435
1436	13 Aquilae ... ... ε	4·3	...	00·97	9	18 55 4·99	+2·7264	+0·0005	−0·0049	1436
1437	52 Draconis ... ... υ	4·9	...	99·61	3	18 55 37·35	−0·7311	−0·0305	+0·0103	1437
1438	Serpentis	7·2	...	98·68	3	18 56 9·39	+3·0196	−0·0009	−0·0010	1438
1439	Serpentis	7·1	...	98·71	3	18 56 10·33	+3·0299	−0·0009		1439
1440	Sagittarii	6·0	1	97·26	3	18 56 20·33	+3·6770	−0·0061	−0·0053	1440

1397. Blue. 1398. Orange. The limits of magnitude are 5·0 and 5·7; the period is 8·7 days. 1399. Red. 1402. There is a star (Albany 6254) of nearly same R.A. and about 1¼′ north. 1406. Brighter of two widely separated stars. 1419. Orange-red. 1423. 1897 Sept. 10, magnitude 3. Chandler's limits are 3·4 and 4·5; the period is 13 days. 1424, 1425. The second star is the brighter.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1396	98·11	4	115 28 37·0	−1·904	−0·537	+0·198	2310				4831	4575		1396
1397	98·70	3	89 51 45·1	−1·930	−0·445	+0·002	2312	34063	453			4576	+ 0 3936	1397
1398	98·63	4	89 51 47·7	−1·930	−0·445	+0·002	2312	34063	453		4836	4577	+ 0 3936	1398
1399	96·95	3	86 18 45·3	−1·997	−0·433			34115	478	6238			+ 3 3716	1399
1400	99·06	4	17 18 37·3	−1·997	+0·175	+0·374	2337	34392			4840	4583	+72 839	1400
1401	96·94	3	86 0 4·3	−2·193	−0·431			34208	535	6250			+ 3 3727	1401
1402	98·27	3	85 33 26·4	−2·247	−0·429			34232	556	6253			+ 4 3774	1402
1403	97·57	3	86 24 44·0	−2·368	−0·432			34289	592	6261			+ 3 3737	1403
1404	99·61	3	88 10 17·7	−2·485	−0·438			34337	623	6268			+ 1 3712	1404
1405	97·28	3	67 44 52·9	−2·540	−0·365	+0·450							+22 3406	1405
1406	97·92	3	85 8 36·0	−2·675	−0·427			34438	681	6279			+ 4 3801	1406
1407	98·58	3	85 7 35·6	−2·752	−0·426			34468	701	6285			+ 4 3806	1407
1408	97·29	3	86 17 36·8	−2·784	−0·430					6289			+ 3 3755	1408
1409	97·30	3	89 7 59·6	−2·797	−0·440			34489	715	6290			+ 0 3975	1409
1410	99·65	5	51 18 33·9	−2·925	−0·289	−0·295	2341	34598			4897	4649	+38 3238	1410
1411	98·62	3	85 13 53·6	−2·940	−0·426			34556	769	6309			+ 4 3823	1411
1412	98·31	3	84 49 31·6	−3·024	−0·424			34590	796	6318			+ 5 3891	1412
1413	99·61	3	89 31 43·1	−3·166	−0·440			34645	840				+ 0 3993	1413
1414	97·99	3	85 32 4·3	−3·170	−0·426			34653		6331			+ 4 3838	1414
1415	98·97	3	99 8 53·2	−3·206	−0·472	−0·005	2342	34647	844		4910	4664	− 9 4796	1415
1416	99·61	3	86 18 43·4	−3·350	−0·428			34723		6341			+ 3 3784	1416
1417	96·59	3	117 5 35·8	−3·431	−0·537	+0·019	2344	34713				4683		1417
1418	97·26	3	88 2 30·4	−3·463	−0·433	+0·026	2346	34782	943	6359			+ 1 3766	1418
1419	97·29	3	85 52 7·9	−3·747	−0·425				1024	6381			+ 4 3884	1419
1420	98·59	3	89 16 36·6	−3·871	−0·436			35005					+ 0 4027	1420
1421	97·98	3	67 9 36·9	−3·945	−0·359								+22 3494	1421
1422	97·27	3	119 29 52·3	−4·021	−0·543			35018				4723		1422
1423	00·01	5	56 45 12·9	−4·031	−0·315	−0·017	2369	35134			4969	4727	+33 3223	1423
1424	98·58	3	88 13 33·3	−4·294	−0·430			35215		6413			+ 1 3814	1424
1425	98·58	3	88 14 15·1	−4·302	−0·430			35219		6414			+ 1 3815	1425
1426	98·64	3	89 0 12·7	−4·325	−0·432			35228	1208	6418			+ 0 4051	1426
1427	98·00	3	85 41 30·1	−4·392	−0·421			35267		6421			+ 4 3909	1427
1428	98·99	3	89 51 46·1	−4·397	−0·435			35263					+ 0 4055	1428
1429	99·29	3	86 40 41·8	−4·410	−0·424				1238	6424			+ 3 3836	1429
1430	98·69	3	85 55 34·9	−4·447	−0·422	−0·042	2376	35295	1252	6429		4765	+ 4 3916	1430
1431	98·69	3	85 55 40·2	−4·449	−0·422	−0·057	2377	35334	1255	6430		4766	+ 4 3917	1431
1432	98·72	3	87 39 30·1	−4·459	−0·427			35302	1258	6431			+ 2 3730	1432
1433	99·58	3	85 51 45·6	−4·482	−0·421	+0·093		35358	1265	6433			+ 4 3919	1433
1434	98·70	3	87 35 45·5	−4·532	−0·427	+0·003	2379	35330	1272	6442			+ 2 3738	1434
1435	97·64	3	88 56 9·2	−4·626	−0·431			35385		6449			+ 1 3837	1435
1436	02·68	3	75 4 2·2	−4·773	−0·384	+0·080	2390	35469			5018	4784	+14 3736	1436
1437	98·91	3	18 50 10·7	−4·819	+0·106	−0·031	2411	35749				4794	+71 915	1437
1438	98·68	3	87 39 8·5	−4·864	−0·425	+0·280				6474			+ 2 3753	1438
1439	98·71	3	88 6 29·5	−4·866	−0·427					6475			+ 1 3854	1439
1440	97·26	3	114 59 5·6	−4·880	−0·518	+0·182		35458				4793		1440

1405. The Proper Motions have been specially computed for the present catalogue. 1433. Authority for Proper Motions: Boss. 1438. The Proper Motion adopted is the mean of Porter and Boss. 1440. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis).

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1441	Serpentis	7·3	...	99·00	3	18 56 31·67	+ 3·0174	− 0·0009		1441
1442	Aquilae	7·0	1	98·96	3	18 58 13·12	+ 3·0630	− 0·0012		1442
1443	Aquilae	6·3	1	99·15	4	18 58 28·65	+ 3·0349	− 0·0010		1443
1444	Aquilae	7·1	3	97·26	3	18 58 33·55	+ 3·0185	− 0·0010		1444
1445	Aquilae	6·5	...	98·66	3	18 59 10·55	+ 3·0009	− 0·0009		1445
1446	Aquilae	7·4	1	98·70	3	19 0 45·02	+ 2·9796	− 0·0008		1446
1447	17 Aquilae ... ... ζ	3·0	...	99·62	11	19 0 48·78	+ 2·7579	+ 0·0003	− 0·0026	1447
1448	Herculis	8·7	1	97·29	3	19 0 53·05	+ 2·5273	+ 0·0010	+ 0·0130	1448
1449	Sagittarii	6·3	1	97·30	3	19 1 13·00	+ 3·7813	− 0·0081		1449
1450	Aquilae	7·3	1	98·72	3	19 2 2·88	+ 3·0618	− 0·0014		1450
1451	Aquilae	7·3	1	98·67	3	19 2 25·00	+ 2·9586	− 0·0008		1451
1452	Aquilae	7·5	...	98·02	3	19 3 9·07	+ 3·0471	− 0·0013		1452
1453	Aquilae	7·2	2	98·63	3	19 6 9·31	+ 2·9602	− 0·0009		1453
1454	Aquilae	7·4	3	98·65	3	19 6 10·68	+ 2·9581	− 0·0009		1454
1455	Aquilae	7·4	2	99·60	3	19 7 1·53	+ 3·0178	− 0·0013		1455
1456	21 Aquilae	5·9	2	97·27	3	19 8 40·19	+ 3·0254	− 0·0014	− 0·0010	1456
1457	42 Sagittarii ... ... ψ	5·0	1	98·74	8	19 9 24·55	+ 3·6794	− 0·0080	+ 0·0004	1457
1458	22 Aquilae	6·3	5	97·28	3	19 11 34·09	+ 2·9691	− 0·0012	− 0·0004	1458
1459	Aquilae	8·0	1	98·70	3	19 12 4·61	+ 3·0656	− 0·0019		1459
1460	Aquilae	6·0	...	98·60	3	19 12 45·13	+ 3·0316	− 0·0017		1460
1461	Aquilae	8·4	3	99·61	3	19 12 45·39	+ 3·0037	− 0·0014		1461
1462	59 Draconis	5·2	...	99·63	3	19 12 50·27	− 2·1739	− 0·0928	+ 0·0090	1462
1463	25 Aquilae ... ... ω	5·1	...	98·38	9	19 13 7·34	+ 2·8165	− 0·0003	− 0·0014	1463
1464	Aquilae	7·0	1	99·00	3	19 13 24·38	+ 3·0674	− 0·0020	+ 0·0013	1464
1465	Aquilae	7·3	4	98·65	3	19 13 26·68	+ 2·9628	− 0·0012		1465
1466	23 Aquilae	5·2	...	98·99	3	19 13 27·17	+ 3·0527	− 0·0018	− 0·0016	1466
1467	24 Aquilae	7·0	2	99·01	3	19 13 43·96	+ 3·0693	− 0·0020	− 0·0039	1467
1468	Aquilae	7·3	3	97·61	3	19 15 22·64	+ 2·9711	− 0·0013	− 0·0026	1468
1469	Aquilae	7·3	2	97·66	3	19 16 7·09	+ 2·9638	− 0·0013		1469
1470	Aquilae	7·8	...	98·72	3	19 17 14·10	+ 3·0685	− 0·0021		1470
1471	30 Aquilae ... ... δ	3·0	1	98·06	22	19 20 27·35	+ 3·0088	− 0·0018	+ 0·0153	1471
1472	32 Aquilae ... ... ν	5·3	2	98·64	3	19 21 24·24	+ 3·0697	− 0·0023	− 0·0009	1472
1473	Ursae Minoris ... λ	6·3	1	00·05	41	19 22 29·96	− 67·7358	− 26·8300	− 0·0533	1473
1474	Aquilae	7·2	4	96·66	3	19 22 43·61	+ 2·9741	− 0·0016		1474
1475	Aquilae	7·3	2	97·96	3	19 22 48·84	+ 3·0297	− 0·0020		1475
1476	Aquilae	5·9	...	98·70	3	19 23 19·53	+ 3·0132	− 0·0019		1476
1477	Aquilae	8·1*	...	98·72	3	19 23 40·79	+ 2·9966	− 0·0018		1477
1478	35 Aquilae c	6·4	2	97·99	3	19 23 57·59	+ 3·0347	− 0·0021	− 0·0010	1478
1479	Aquilae	6·9	1	99·61	3	19 24 10·89	+ 3·0718	− 0·0025		1479
1480	6 Vulpeculae ... α	4·6	...	98·46	5	19 24 32·60	+ 2·5055	+ 0·0009	− 0·0108	1480
1481	Aquilae	6·9	2	98·00	3	19 25 9·15	+ 3·0140	− 0·0020		1481
1482	Aquilae	6·7	1	98·65	3	19 25 32·87	+ 3·0023	− 0·0019		1482
1483	Aquilae	6·8	...	98·70	3	19 26 1·93	+ 3·0336	− 0·0022		1483
1484	6 Cygni ... ... β	3·1	...	99·26	4	19 26 41·24	+ 2·4191	+ 0·0011	− 0·0017	1484
1485	Aquilae	7·4	2	98·01	3	19 26 41·74	+ 2·9682	− 0·0016		1485

1453, 1469, 1472, 1481. Reddish. 1454. 1899 Aug. 18, Aug. 31, Certainly fainter than No. 1453. In the Albany Catalogue this star is 0·7 magnitude brighter than No. 1453. 1484. Wide double: brighter observed. Orange.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1441	99·00	3	87 33 14·2	−4·896	−0·425					6478			+ 2 3756	1441
1442	98·96	3	89 34 9·9	−5·039	−0·430				1424				+ 0 4088	1442
1443	99·02	3	88 19 32·4	−5·061	−0·426			35598	1431	6495			+ 1 3865	1443
1444	97·26	3	87 36 3·5	−5·068	−0·424				1435	6496			+ 2 3765	1444
1445	98·66	3	86 49 4·6	−5·120	−0·421				1455	6502			+ 3 3882	1445
1446	98·70	3	85 52 24·1	−5·253	−0·417					6522			+ 4 3969	1446
1447	98·61	3	76 17 6·8	−5·259	−0·386	+0·089	2405	35718			5050	4818	+13 3899	1447
1448	97·29	3	67 4 48·0	−5·264	−0·353	−0·280							+22 3579	1448
1449	97·30	3	118 47 27·7	−5·293	−0·530							4822		1449
1450	98·72	3	89 30 48·2	−5·363	−0·428			35758	1536				+ 0 4106	1450
1451	98·67	3	84 56 9·7	−5·394	−0·413					6538			+ 4 3979	1451
1452	98·02	3	88 51 30·5	−5·456	−0·425			35810	1572	6546			+ 1 3899	1452
1453	98·63	3	84 59 3·0	−5·708	−0·411			35968	64	6569			+ 4 4004	1453
1454	98·65	3	84 53 23·0	−5·710	−0·411			35969	67	6570			+ 5 4056	1454
1455	99·60	3	87 32 36·6	−5·781	−0·419			36008	85	6577			+ 2 3815	1455
1456	97·27	3	87 52 35·3	−5·919	−0·419	−0·011	2419	36086	136	6593		4860	+ 2 3824	1456
1457	96·94	3	115 25 44·3	−5·980	−0·510	+0·029	2418				5094	4863		1457
1458	97·28	3	85 20 29·9	−6·160	−0·409	+0·001	2424	36225	209	6612		4874	+ 4 4045	1458
1459	98·70	3	89 40 48·2	−6·203	−0·423			36256	222				+ 0 4158	1459
1460	98·60	3	88 8 49·9	−6·259	−0·417			36285	238	6617			+ 1 3960	1460
1461	99·61	3	86 53 19·5	−6·260	−0·413				239	6618			+ 3 3966	1461
1462	98·54	6	13 36 21·5	−6·266	+0·304	+0·133	2466	36682					+76 717	1462
1463	97·64	3	78 35 5·2	−6·290	−0·387	−0·025	2432	36319	255		5114	4885	+11 3790	1463
1464	99·00	3	89 45 30·1	−6·313	−0·422	−0·032	2429	36313	254		5118		+ 0 4166	1464
1465	98·65	3	85 3 2·0	−6·316	−0·407			36322	261	6621			+ 4 4057	1465
1466	98·99	3	89 5 47·6	−6·317	−0·420	−0·022	2430	36316	256				+ 0 4168	1466
1467	99·01	3	89 50 34·8	−6·340	−0·422	−0·018	2431	36326	264		5120		+ 0 4170	1467
1468	97·61	3	85 24 17·3	−6·477	−0·407	+0·104		36407		6635			+ 4 4071	1468
1469	97·66	3	85 4 25·9	−6·538	−0·406			36444	326	6639			+ 4 4073	1469
1470	98·72	3	89 48 29·4	−6·630	−0·419				359				+ 0 4186	1470
1471	97·94	6	87 5 4·8	−6·896	−0·409	−0·091	2451	36646	435	6669	5162	4931	+ 2 3879	1471
1472	98·64	3	89 51 38·6	−6·973	−0·417	−0·024	2455	36679	456		5164	4940	+ 0 4206	1472
1473	00·73	32	1 0 44·0	−7·063	+9·249	+0·006	2795				5247	5037	+88 112	1473
1474	96·66	3	85 29 33·8	−7·082	−0·403				495	6690			+ 4 4114	1474
1475	97·96	3	88 1 41·2	−7·089	−0·410			36751	497	6692			+ 1 4004	1475
1476	98·70	3	87 16 23·7	−7·131	−0·408					6696			+ 2 3892	1476
1477	98·72	3	86 30 36·0	−7·160	−0·405			36794	523	6698			+ 3 4033	1477
1478	97·99	3	88 15 14·1	−7·183	−0·410	+0·022	2463	36803	531	6701			+ 1 4010	1478
1479	99·61	3	89 57 33·4	−7·201	−0·415			36813			5179		− 0 3760	1479
1480	99·71	3	65 32 15·2	−7·230	−0·338	+0·102	2467	36882			5182	4957	+24 3759	1480
1481	98·00	3	87 18 13·5	−7·280	−0·406			36863	564	6713			+ 2 3904	1481
1482	98·65	3	86 45 51·4	−7·312	−0·405			36890	573	6716			+ 3 4043	1482
1483	98·70	3	88 11 52·7	−7·352	−0·408			36909		6720			+ 1 4021	1483
1484	99·64	3	62 15 0·8	−7·405	−0·325	+0·013	2473	36969				4970	+27 3410	1484
1485	98·01	3	85 11 23·1	−7·406	−0·399				605	6725			+ 4 4138	1485

1448. The Proper Motions have been specially computed for the present catalogue.

1468. Authority for Proper Motions: Boss.

No.	Constellation.		Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
							h. m. s.	s.	s.	s.	
1486	Aquilae		6·8	3	96·94	3	19 28 10·93	+2·9684	−0·0017		1486
1487	Aquilae		7·3	3	97·97	3	19 28 37·43	+2·9960	−0·0019		1487
1488	Aquilae		6·8	...	98·70	3	19 28 50·19	+2·9590	−0·0017		1488
1489	38 Aquilae	μ	4·7	...	99·23	5	19 29 12·23	+2·9172	−0·0013	+0·0129	1489
1490	Aquilae		7·3	1	98·29	3	19 30 23·66	+3·0147	−0·0022	+0·0026	1490
1491	52 Sagittarii	h^2	4·7	...	01·70	3	19 30 37·30	+3·6508	−0·0104	+0·0041	1491
1492	Aquilae		7·0	1	99·65	3	19 30 53·91	+3·0721	−0·0027		1492
1493	61 Draconis	σ	4·8	...	99·66	3	19 32 33·23	−0·2136	−0·0371	+0·0973	1493
1494	Sagittarii		6·6	...	98·28	3	19 32 41·75	+3·7493	−0·0124		1494
1495	Aquilae		7·4	...	98·71	3	19 33 14·59	+3·0702	−0·0028		1495
1496	Aquilae		6·9	2	96·65	4	19 33 48·59	+3·0051	−0·0022		1496
1497	53 Sagittarii		6·3	...	97·42	4	19 33 48·92	+3·6099	−0·0101	−0·0029	1497
1498	Sagittarii		6·1	...	97·42	4	19 34 6·44	+3·6097	−0·0101	+0·0001	1498
1499	44 Aquilae	σ	5·5	1	98·65	3	19 34 15·47	+2·9619	−0·0018	−0·0018	1499
1500	54 Sagittarii	e^1	5·5	...	00·86	5	19 34 59·69	+3·4357	−0·0075	+0·0026	1500
1501	Aquilae		7·8*	...	99·62	3	19 37 24·40	+3·0440	−0·0027	+0·0100	1501
1502	Aquilae		7·4	5	96·61	3	19 39 34·43	+2·9722	−0·0020		1502
1503	Aquilae		7·2	5	97·38	4	19 40 58·15	+2·9881	−0·0022		1503
1504	50 Aquilae	γ	2·8	...	99·81	15	19 41 30·29	+2·8517	−0·0010	−0·0005	1504
1505	Aquilae		7·0	2	98·64	3	19 42 28·12	+3·0548	−0·0030	−0·0050	1505
1506	7 Sagittae	δ	3·9	...	99·45	3	19 42 55·66	+2·6747	+0·0002	−0·0008	1506
1507	Aquilae		7·7	1	99·63	3	19 44 41·28	+3·0161	−0·0026		1507
1508	Aquilae		7·6	2	98·67	3	19 45 48·83	+3·0604	−0·0032		1508
1509	53 Aquilae	α	0·8	...	99·26	13	19 45 54·20	+2·8917	−0·0015	+0·0351	1509
1510	Aquilae		6·7	3	98·16	4	19 46 27·66	+2·9926	−0·0024		1510
1511	55 Aquilae	η	Var.	...	98·72	3	19 47 22·69	+3·0571	−0·0032	−0·0017	1511
1512	Aquilae		6·9	5	96·61	3	19 48 24·02	+2·9866	−0·0024		1512
1513	58 Aquilae		6·2	1	99·67	3	19 49 37·42	+3·0724	−0·0034	+0·0003	1513
1514	58 Sagittarii	ω	4·8	...	97·63	3	19 49 42·88	+3·6660	−0·0132	+0·0127	1514
1515	60 Aquilae	β	3·8	...	98·78	10	19 50 24·03	+2·9450	−0·0020	+0·0007	1515
1516	59 Sagittarii	b	4·6	...	98·34	3	19 50 48·62	+3·6872	−0·0138	−0·0023	1516
1517	Aquilae		6·9	...	01·72	3	19 52 6·18	+3·0710	−0·0035		1517
1518	Aquilae		9·1	2	98·70	3	19 52 11·32	+3·0028	−0·0027		1518
1519	Aquilae		9·5	2	99·60	3	19 52 47·05	+3·1706	−0·0048		1519
1520	Aquilae		6·8	...	98·72	3	19 53 39·79	+3·0440	−0·0032		1520
1521	Aquilae		6·7	2	98·66	3	19 54 17·55	+3·0501	−0·0033		1521
1522	12 Sagittae	γ	3·7	...	99·51	3	19 54 18·46	+2·6635	+0·0003	+0·0030	1522
1523	Aquilae		7·3	1	97·34	3	19 55 20·34	+3·0102	−0·0028		1523
1524	Aquilae		9·0	1	98·67	3	19 55 52·80	+2·8906	−0·0016		1524
1525	Aquilae		10·8	3	99·62	3	19 55 54·25	+3·1830	−0·0051		1525
1526	62 Sagittarii	c	4·6	...	98·51	6	19 56 30·57	+3·6933	−0·0147	+0·0004	1526
1527	Aquilae		7·6	4	97·41	4	19 56 49·06	+2·9821	−0·0025		1527
1528	15 Vulpeculae		4·6	...	99·68	3	19 56 58·92	+2·4661	+0·0012	+0·0029	1528
1529	Aquilae		10·0	1	99·62	5	19 57 53·71	+3·1758	−0·0051		1529
1530	Aquilae		6·5	4	97·29	5	19 58 14·36	+2·9822	−0·0025		1530

1486. Yellowish-red. 1488. Reddish-orange. 1504, 1527, 1530. Reddish. 1510. Reddish. Companion, magnitude 9·7, follows south. 1511. The limits of magnitude are 3·5 and 4·7; the period is 7 days. 1512. 1896 Sept. 23, Brighter than No. 1510. The magnitude given for No. 1512 in Albany Catalogue is 6·0. 1522. Orange. 1515. A star slightly brighter precedes 13^s and is south. There is another star of about same R.A. as No. 1525, 1′ north.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1486	96·94	3	85 11 6·4	−7·527	−0·398			36997	648	6743			+ 4 4152	1486
1487	97·97	3	86 27 15·3	−7·562	−0·401				661	6746			+ 3 4065	1487
1488	98·70	3	84 44 58·0	−7·580	−0·396			37019	668	6747			+ 5 4190	1488
1489	01·60	3	82 50 0·4	−7·609	−0·390	+0·133	2479	37044			5209	4992	+ 7 4132	1489
1490	98·29	3	87 18 27·1	−7·706	−0·403	−0·099		37085	703	6755			+ 2 3932	1490
1491	00·67	3	115 6 16·1	−7·724	−0·488	+0·024	2478	37051			5218	5004		1491
1492	99·65	3	89 58 14·7	−7·746	−0·410			37111	713		5221		− 0 3789	1492
1493	98·54	6	20 30 32·0	−7·879	+0·032	+1·766	2505				5237	5026	+69 1053	1493
1494	98·28	3	118 49 58·9	−7·891	−0·499			37147				5019		1494
1495	98·71	3	89 52 51·4	−7·935	−0·408			37227	780		5239		+ 0 4265	1495
1496	96·65	4	86 50 44·2	−7·981	−0·399			37262		6770			+ 3 4097	1496
1497	02·62	3	113 39 19·4	−7·981	−0·479	+0·046	2486	37211			5243	5033		1497
1498	02·62	3	113 39 28·1	−8·004	−0·479	−0·007	2488	37225			5246	5036		1498
1499	98·65	3	84 49 48·0	−8·017	−0·392	−0·004	2492	37279	819	6780	5251	5040	+ 5 4225	1499
1500	02·73	3	106 31 20·5	−8·075	−0·455	+0·039	2490	37277			5253	5043	−16 5399	1500
1501	99·62	3	88 38 49·1	−8·268	−0·401	+0·080		37411	904	6798			+ 1 4075	1501
1502	96·61	3	85 15 37·8	−8·441	−0·390			37504	958	6825			+ 4 4210	1502
1503	97·64	3	85 59 38·4	−8·551	−0·390			37571		6837			+ 3 4138	1503
1504	98·36	3	79 37 49·6	−8·594	−0·372	−0·008	2511	37598	1007		5283	5087	+10 4043	1504
1505	98·64	3	89 9 3·7	−8·670	−0·398	+0·260		37626	1022				+ 0 4314	1505
1506	98·96	4	71 42 45·2	−8·706	−0·348	−0·031	2516	37671			5292	5102	+18 4240	1506
1507	99·63	3	87 17 50·4	−8·844	−0·391			37722	1078	6858			+ 2 4000	1507
1508	98·67	3	89 24 32·7	−8·933	−0·396			37762	1107				+ 0 4331	1508
1509	00·67	3	81 23 44·9	−8·939	−0·374	−0·384	2524	37771	1111		5304	5123	+ 8 4236	1509
1510	98·67	3	86 9 56·9	−8·983	−0·386			37791	1120	6873			+ 3 4172	1510
1511	98·72	3	89 15 3·3	−9·055	−0·394	+0·003	2526	37812	1144				+ 0 4337	1511
1512	96·61	3	85 51 30·3	−9·135	−0·384			37855	1167	6887			+ 4 4264	1512
1513	99·67	3	89 59 16·1	−9·230	−0·394	+0·015	2535	37896	1202		5325		− 0 3871	1513
1514	97·63	3	116 33 52·1	−9·237	−0·471	−0·093	2528	37861				5144		1514
1515	02·59	3	83 50 34·7	−9·290	−0·377	+0·473	2538	37938	1222		5327	5150	+ 6 4357	1515
1516	98·34	3	117 26 5·0	−9·322	−0·472	+0·024	2533	37902				5154		1516
1517	01·72	3	89 54 53·0	−9·422	−0·391			38017	1253		5332		− 0 3881	1517
1518	98·70	3	86 36 25·5	−9·429	−0·382								+ 3 4207	1518
1519	99·60	3	94 44 54·7	−9·475	−0·403								− 4 4980	1519
1520	98·72	3	88 36 10·1	−9·542	−0·386			38047	1286	6927			+ 1 4159	1520
1521	98·66	3	88 53 45·0	−9·591	−0·386				1305	6931			+ 0 4375	1521
1522	98·60	7	70 46 46·1	−9·592	−0·337	−0·037	2550	38135			5347	5188	+19 4229	1522
1523	97·34	3	86 56 29·5	−9·671	−0·380			38158	1331	6944			+ 2 4058	1523
1524	98·67	3	81 9 3·5	−9·712	−0·365								+ 8 4298	1524
1525	99·62	3	95 23 21·6	−9·714	−0·402									1525
1526	02·59	3	117 59 16·7	−9·760	−0·466	−0·024	2549	38159			5360	5203		1526
1527	98·01	3	85 33 34·9	−9·784	−0·375			38226	1379	6956			+ 4 4314	1527
1528	01·45	8	62 31 22·2	−9·796	−0·310	−0·026	2558	38260					+27 3587	1528
1529	99·62	3	95 3 42·3	−9·866	−0·399									1529
1530	97·69	3	85 32 59·1	−9·893	−0·374			38281	1408	6959			+ 4 4325	1530

1490, 1501. Authority for Proper Motions: Boss. 1491. Authority for Proper Motions: Auwers (Astronomische Nachrichten, 3929). 1505. Authority for Proper Motions: Porter.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1531	Aquilae	7·0	2	98·69	3	20 0 6·57	+3·0356	−0·0032	0·0000	1531
1532	Aquilae	7·0	1	98·69	3	20 0 13·47	+3·0693	−0·0037		1532
1533	Sagittae	8·9*	...	98·68	3	20 0 40·45	+2·6438	+0·0005		1533
1534	Aquilae	7·3	5	97·16	4	20 0 57·82	+2·9821	−0·0026		1534
1535	Aquilae	7·6	5	97·70	3	20 2 39·08	+2·9826	−0·0026		1535
1536	Aquilae	7·0	1	97·66	3	20 2 40·79	+3·0295	−0·0032		1536
1537	65 Aquilae ... ... θ	3·3	...	98·93	17	20 6 8·71	+3·0950	−0·0042	−0·0001	1537
1538	Aquilae	7·4†	...	98·69	3	20 7 29·05	+3·0614	−0·0038		1538
1539	Aquilae	7·1†	...	98·71	3	20 7 29·09	+3·0614	−0·0038		1539
1540	67 Aquilae ... ... ρ	4·9	...	01·70	3	20 9 38·95	+2·7726	−0·0004	+0·0028	1540
1541	Aquilae	7·3	1	97·32	3	20 9 52·31	+3·0116	−0·0031		1541
1542	Aquilae	7·0	2	98·64	3	20 10 30·05	+3·0227	−0·0033		1542
1543	Aquilae	6·7	3	97·39	3	20 11 7·50	+2·9887	−0·0028		1543
1544	23 Vulpeculae	4·7	...	00·69	3	20 11 37·43	+2·4883	+0·0015	−0·0046	1544
1545	6 Capricorni ... ... α^2	3·8	...	98·94	11	20 12 30·37	+3·3282	−0·0085	+0·0022	1545
1546	Aquilae	7·0	...	98·64	3	20 13 30·56	+3·0663	−0·0040		1546
1547	9 Capricorni ... ... β	3·2	...	99·12	9	20 15 23·57	+3·3722	−0·0096	+0·0008	1547
1548	Aquilae	5·9	2	96·98	3	20 18 13·38	+2·9760	−0·0027		1548
1549	Aquilae	6·3	1	98·66	3	20 19 31·78	+3·0585	−0·0040		1549
1550	Aquilae	7·2	...	99·61	3	20 19 35·99	+2·9732	−0·0027		1550
1551	Aquilae	6·9	2	98·05	3	20 19 36·65	+3·0527	−0·0039		1551
1552	Aquilae	7·0	1	98·68	3	20 21 13·00	+3·0226	−0·0034		1552
1553	11 Capricorni ... ... ρ	5·0	...	97·55	6	20 23 9·45	+3·4281	−0·0115	−0·0028	1553
1554	Aquilae	6·9	2	98·69	3	20 23 14·31	+3·0234	−0·0035		1554
1555	Aquilae	7·3	1	98·70	3	20 23 29·97	+3·0623	−0·0041		1555
1556	Aquilae	7·0	...	99·69	3	20 24 42·70	+3·0226	−0·0035		1556
1557	41 Cygni	4·1	...	99·49	3	20 25 18·48	+2·4501	+0·0020	+0·0005	1557
1558	Capricorni	7·2	...	98·02	3	20 26 21·79	+3·5780	−0·0157		1558
1559	Aquilae	7·1	...	99·63	3	20 26 43·89	+2·9963	−0·0031		1559
1560	Capricorni	6·2	...	97·75	3	20 26 55·05	+3·5787	−0·0158		1560
1561	Aquilae	7·2	2	98·65	3	20 27 14·08	+3·0376	−0·0037		1561
1562	Aquilae	6·8	3	98·36	3	20 27 16·44	+3·0392	−0·0038		1562
1563	2 Delphini ... ... ε	3·9	...	99·18	6	20 28 26·09	+2·8662	−0·0012	−0·0006	1563
1564	Aquarii	7·0	1	97·32	3	20 29 1·18	+2·9879	−0·0030		1564
1565	Aquarii	7·3	1	97·31	3	20 31 39·48	+3·0331	−0·0037		1565
1566	6 Delphini ... ... β	3·7	...	99·42	4	20 32 51·52	+2·8060	−0·0004	+0·0057	1566
1567	1 Aquarii	5·4	...	99·64	3	20 34 17·36	+3·0702	−0·0044	+0·0050	1567
1568	Aquarii	8·4*	...	99·70	3	20 34 33·20	+2·9884	−0·0030	+0·0570	1568
1569	9 Delphini ... ... α	3·8	...	98·59	15	20 34 59·55	+2·7824	−0·0001	+0·0031	1569
1570	Aquarii	7·0	1	98·04	3	20 35 15·81	+3·0166	−0·0035		1570
1571	Delphini	7·4	2	98·05	3	20 38 41·92	+2·9822	−0·0029		1571
1572	11 Delphini ... ... δ	4·5	...	99·44	3	20 38 47·39	+2·8026	−0·0002	−0·0025	1572
1573	16 Capricorni ... ... ψ	4·2	...	95·69	4	20 40 10·46	+3·5637	−0·0169	−0·0061	1573
1574	Aquarii V	Var.	2	99·68	4	20 41 46·02	+3·0359	−0·0038		1574
1575	2 Aquarii ... ... ε	3·6	...	98·56	8	20 42 15·73	+3·2493	−0·0084	−0·0002	1575

1533. Red. 1535. Reddish. 1538, 1539. Double. Components of nearly equal magnitude; 1538, observed as one mass; 1539, brighter and north following observed. 1553. Companion follows. 1562. A star (Albany 7159), magnitude 9·1, follows 3ˢ and is slightly south. 1571. Albany magnitude, 6·0 (3 estimations). 1574. 1899 Aug. 24, mag. 8; 1899 Sept. 2, mag. 8·2. Chandler's limits are 8·1 and 9·3; the period is 240 days. A star, mag. 9·2, follows about 5ˢ and is north.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Preces.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1531	98·69	3	88 9 44·2	−10·034	−0·379	+0·141		38371	1453	6973			+1 4196	1531
1532	98·69	3	89 49 45·8	−10·043	−0·383			38374	1456		5381		+0 4411	1532
1533	98·68	3	69 38 10·3	−10·077	−0·329								+20 4417	1533
1534	97·34	3	85 30 35·4	−10·099	−0·371			38402	1480	6981			+4 4341	1534
1535	97·70	3	85 31 2·7	−10·226	−0·370			38475	1518	6994			+4 4349	1535
1536	97·66	3	87 50 46·5	−10·228	−0·376			38470	1515	6995			+2 4093	1536
1537	01·63	3	91 7 4·7	−10·488	−0·380	−0·014	2576	38627	63		5413	5279	−1 3911	1537
1538	98·69	3	89 25 54·8	−10·588	−0·375				105				+0 4444	1538
1539	98·71	3	89 25 52·9	−10·588	−0·375				105			5292	+0 4444	1539
1540	99·08	3	75 6 25·0	−10·748	−0·337	−0·081	2590	38818				5316	+14 4227	1540
1541	97·32	3	86 53 50·8	−10·765	−0·366			38807	169	7042			+2 4121	1541
1542	98·64	3	87 27 31·8	−10·811	−0·367			38842		7047			+2 4124	1542
1543	97·39	3	85 43 26·5	−10·857	−0·362			38862	199	7050			+4 4395	1543
1544	01·01	13	62 29 33·2	−10·894	−0·300	−0·010	2602	38939			5444	5342	+27 3666	1544
1545	98·00	3	102 51 16·9	−10·958	−0·402	−0·017	2595	38898	223		5449	5349	−12 5685	1545
1546	98·64	3	89 40 13·4	−11·032	−0·369			38971	256		5455		+0 4475	1546
1547	98·26	5	105 5 49·6	−11·169	−0·404	−0·022	2609	39035			5466	5393	−15 5629	1547
1548	96·98	3	84 58 35·8	−11·374	−0·353			39176	392	7096		5408	+4 4434	1548
1549	98·66	3	89 15 18·5	−11·468	−0·361			39222					+0 4495	1549
1550	99·61	3	84 48 49·7	−11·473	−0·351			39236	427	7105			+5 4503	1550
1551	98·05	3	88 57 16·1	−11·474	−0·360			39230		7104			+0 4496	1551
1552	98·68	3	87 22 10·6	−11·589	−0·355			39312		7115			+2 4164	1552
1553	97·34	5	108 8 40·0	−11·727	−0·400	+0·007	2626	39355			5501	5445	−18 5689	1553
1554	98·69	3	87 23 37·7	−11·732	−0·353					7126			+2 4175	1554
1555	98·70	3	89 26 50·5	−11·751	−0·357			39391	527				+0 4515	1555
1556	99·69	3	87 20 14·2	−11·837	−0·351			39403	555	7134			+2 4179	1556
1557	01·54	9	59 57 55·4	−11·879	−0·283	+0·001	2637	39502				5467	+29 4057	1557
1558	98·02	3	115 12 29·4	−11·953	−0·414			39471						1558
1559	99·63	3	85 55 18·6	−11·979	−0·345			39525	608	7152			+3 4356	1559
1560	97·75	3	115 16 52·4	−11·992	−0·413			39493				5480		1560
1561	98·65	3	88 7 6·5	−12·014	−0·349			39540	620	7157			+1 4309	1561
1562	98·36	3	88 12 21·1	−12·017	−0·350			39542	622	7158			+1 4310	1562
1563	99·35	3	79 2 11·3	−12·098	−0·328	+0·022	2642	39607	658		5529	5492	+10 4321	1563
1564	97·32	3	85 26 34·2	−12·139	−0·342			39625	673	7178			+4 4486	1564
1565	97·31	3	87 51 4·0	−12·322	−0·344			39735	743	7197			+1 4327	1565
1566	99·11	4	75 45 9·8	−12·405	−0·316	+0·031	2656	39810	785		5547	5536	+14 4369	1566
1567	99·64	3	89 51 54·1	−12·503	−0·345	+0·020	2661	39850			5557		−0 4064	1567
1568	99·70	3	85 22 58·1	−12·521	−0·335	−0·050		39866	821	7215			+4 4510	1568
1569	99·69	3	74 26 26·7	−12·551	−0·311	+0·002	2670	39907	845		5563	5551	+15 4222	1569
1570	98·04	3	86 54 45·8	−12·569	−0·337			39897	843	7223			+2 4220	1570
1571	98·05	3	84 58 11·1	−12·802	−0·330			40029	933	7244			+4 4529	1571
1572	00·58	6	75 17 3·2	−12·808	−0·309	+0·036	2678	40036	945			5570	+14 4403	1572
1573	95·69	4	115 37 50·4	−12·901	−0·392	+0·154	2676	40039			5585	5572		1573
1574	99·68	3	87 55 42·3	−13·007	−0·331					7261			+1 4359	1574
1575	97·70	4	99 51 42·8	−13·040	−0·354	+0·027	2681	40117	1014		5593	5588	−10 5506	1575

1531, 1568. **Authority for Proper Motions: Porter.**

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1576	Aquarii	6·7	1	98·63	3	20 42 45·71	+3·0207	−0·0035		1576
1577	Aquarii	7·0	1	98·70	3	20 43 6·50	+3·0312	−0·0037		1577
1578	Aquarii	7·3	1	98·73	3	20 43 23·19	+3·0148	−0·0034		1578
1579	Aquarii	7·4	...	98·72	3	20 43 23·23	+3·0488	−0·0041		1579
1580	Vulpeculae...	9·3*	...	98·12	3	20 43 52·65	+2·6108	+0·0019		1580
1581	Vulpeculae...	9·2*	...	98·11	3	20 44 47·21	+2·6125	+0·0021	−0·0170	1581
1582	Equulei	7·0	1	98·70	3	20 44 55·16	+3·0365	−0·0038		1582
1583	Equulei	6·4	2	98·40	3	20 45 0·78	+2·9818	−0·0028		1583
1584	6 Aquarii ... ... μ	4·7	...	99·11	7	20 47 15·59	+3·2369	−0·0083	+0·0008	1584
1585	31 Vulpeculae...	4·9	...	99·26	3	20 47 50·82	+2·5723	+0·0024	−0·0063	1585
1586	Equulei	7·7	1	97·35	3	20 47 53·98	+3·0452	−0·0040		1586
1587	Aquarii	9·5	1	99·04	3	20 49 19·94	+3·1821	−0·0070		1587
1588	Equulei	7·0	1	98·34	3	20 50 3·52	+3·0481	−0·0041		1588
1589	32 Vulpeculae...	5·3	...	98·18	6	20 50 17·80	+2·5564	+0·0027	−0·0016	1589
1590	Equulei	7·0	1	98·37	3	20 50 40·23	+3·0014	−0·0032		1590
1591	Equulei	7·0	1	98·65	3	20 51 42·62	+3·0499	−0·0041	−0·0037	1591
1592	Aquarii	6·6	2	00·70	3	20 52 3·52	+3·0714	−0·0046	0·0000	1592
1593	Equulei	6·9	...	97·39	3	20 52 48·23	+3·0078	−0·0033		1593
1594	1 Equulei	5·4	...	98·66	3	20 54 4·62	+3·0065	−0·0032	−0·0100	1594
1595	Equulei	6·7	...	97·35	3	20 57 40·50	+3·0234	−0·0035		1595
1596	Equulei	7·3	...	97·71	3	20 57 59·22	+3·0511	−0·0041		1596
1597	3 Equulei	5·9	...	98·66	3	20 59 35·83	+2·9881	−0·0028	0·0000	1597
1598	Equulei	7·0	1	98·70	3	20 59 38·63	+3·0307	−0·0037		1598
1599	Equulei	6·7	2	98·72	3	20 59 40·71	+3·0418	−0·0039		1599
1600	23 Capricorni... ... θ	4·1	...	97·09	5	21 0 19·56	+3·3727	−0·0128	+0·0040	1600
1601	Equulei	6·5	2	98·67	3	21 1 37·73	+3·0170	−0·0034		1601
1602	Aquarii	6·9	...	00·46	4	21 2 43·25	+3·0605	−0·0043		1602
1603	Equulei	7·0	1	98·68	3	21 3 1·38	+2·9952	−0·0029		1603
1604	Equulei	7·3	1	97·40	3	21 3 46·56	+3·0503	−0·0041		1604
1605	Equulei	7·0	1	98·65	3	21 4 55·03	+3·0318	−0·0037		1605
1606	Equulei	7·3	2	97·41	3	21 7 41·96	+3·0371	−0·0037		1606
1607	64 Cygni ... ... ζ	3·3	...	98·56	8	21 8 40·74	+2·5519	+0·0039	−0·0015	1607
1608	Equulei	7·3	2	98·69	3	21 9 30·46	+3·0051	−0·0030		1608
1609	8 Equulei ... ... α	4·2	...	98·28	17	21 10 49·48	+2·9967	−0·0027	+0·0021	1609
1610	Equulei	7·1	2	97·77	3	21 12 55·29	+3·0343	−0·0036		1610
1611	5 Cephei ... ... α	2·6	...	99·11	3	21 16 11·52	+1·4136	−0·0072	+0·0211	1611
1612	Equulei	7·2	1	97·10	3	21 16 18·84	+3·0337	−0·0036		1612
1613	Equulei	7·3	2	97·77	3	21 16 20·27	+3·0351	−0·0036		1613
1614	32 Capricorni... ... ι	4·3	...	98·12	10	21 16 40·75	+3·3443	−0·0129	−0·0003	1614
1615	Aquarii	7·3	1	98·68	3	21 16 44·44	+3·0584	−0·0042		1615
1616	Equulei	6·9	1	98·65	3	21 17 0·37	+3·0129	−0·0030		1616
1617	Equulei	6·8	2	97·42	3	21 17 32·42	+3·0349	−0·0035		1617
1618	Equulei	7·3	1	97·43	3	21 18 19·98	+3·0373	−0·0036		1618
1619	Aquarii	7·2	2	98·41	3	21 18 41·55	+3·0538	−0·0040		1619
1620	Aquarii	6·5	1	00·73	3	21 20 44·31	+3·0712	−0·0045		1620

1589. Orange-red. 1590. Close double; brighter observed. Companion, magnitude 8·3, precedes north. 1594. Wide double. The companion, one magnitude fainter, follows north. 1608. Reddish. 1610. B.D. magnitude, 8·2; Albany, 7·3.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1576	98·63	3	87 3 41·0	−13·073	−0·328				1034	7269			+ 2 4250	1576
1577	98·70	3	87 39 8·4	−13·097	−0·329					7270			+ 2 4253	1577
1578	98·73	3	86 43 11·2	−13·115	−0·327			40164	1057	7273			+ 3 4430	1578
1579	98·72	3	88 38 42·1	−13·115	−0·331				1055	7271			+ 1 4369	1579
1580	98·12	3	65 24 32·5	−13·147	−0·282								+24 4246	1580
1581	98·11	3	65 24 58·8	−13·208	−0·281	+0·240							+24 4251	1581
1582	98·70	3	87 56 14·9	−13·216	−0·327			40218	1094	7288			+ 1 4374	1582
1583	98·40	3	84 49 38·1	−13·222	−0·321			40229		7289			+ 5 4626	1583
1584	98·33	3	99 21 30·3	−13·369	−0·346	+0·031	2696		1146		5618	5627	− 9 5598	1584
1585	98·82	4	63 16 38·7	−13·408	−0·273	+0·074	2703	40357					+26 4017	1585
1586	97·35	3	88 24 44·4	−13·411	−0·324				1165	7314			+ 1 4386	1586
1587	99·04	3	96 19 0·6	−13·504	−0·337								− 6 5622	1587
1588	98·34	3	88 34 2·9	−13·551	−0·322			40415	1221	7332			+ 1 4393	1588
1589	98·32	3	62 19 21·3	−13·566	−0·269	+0·002	2709	40456			5633	5651	+27 3911	1589
1590	98·37	3	85 50 57·0	−13·590	−0·316			40444	1232	7335			+ 3 4461	1590
1591	98·65	3	88 39 46·5	−13·657	−0·320	+0·226		40484	1264	7339			+ 1 4397	1591
1592	00·70	3	89 55 8·3	−13·679	−0·322	+0·119		40496	1269		5641		− 0 4132	1592
1593	97·39	3	86 11 24·2	−13·727	−0·314			40534		7347			+ 3 4466	1593
1594	98·66	3	86 5 23·7	−13·808	−0·312	+0·139	2717	40578	1328	7352		5678	+ 3 4473	1594
1595	97·35	3	87 2 35·8	−14·035	−0·309			40739	1414	7372			+ 2 4289	1595
1596	97·71	3	88 42 0·3	−14·054	−0·311			40750	1426	7374			+ 1 4413	1596
1597	98·66	3	84 53 40·1	−14·154	−0·303	+0·007	2734	40808		7386			+ 4 4606	1597
1598	98·70	3	87 27 19·4	−14·157	−0·307			40804	1464	7387			+ 2 4297	1598
1599	98·72	3	88 7 33·2	−14·159	−0·308			40806		7389		5723	+ 1 4418	1599
1600	96·42	3	107 37 49·4	−14·199	−0·341	+0·054	2733	40814			5675	5726	−17 6174	1600
1601	98·67	3	86 35 56·7	−14·279	−0·303			40886	1512	7397			+ 3 4501	1601
1602	00·89	5	89 14 51·4	−14·346	−0·306			40926	1540				+ 0 4663	1602
1603	98·68	3	85 15 4·1	−14·365	−0·299			40944	1550	7406			+ 4 4615	1603
1604	97·40	3	88 37 0·2	−14·411	−0·303			40977	1570	7408			+ 1 4431	1604
1605	98·65	3	87 27 48·1	−14·480	−0·300			41018		7415			+ 2 4311	1605
1606	97·41	3	87 46 3·0	−14·647	−0·296			41136		7429			+ 2 4319	1606
1607	02·06	10	60 11 0·2	−14·706	−0·247	+0·066	2760	41215			5721	5775	+29 4348	1607
1608	98·69	3	85 43 26·2	−14·755	−0·290			41222	135	7438			+ 4 4631	1608
1609	97·38	5	85 9 56·4	−14·833	−0·288	+0·078	2764	41274	170	7447	5736	5788	+ 4 4635	1609
1610	97·77	3	87 31 39·0	−14·956	−0·288			41352		7462			+ 2 4333	1610
1611	99·11	3	27 50 17·4	−15·145	−0·129	−0·025	2786				5761	5811	+61 2111	1611
1612	97·10	3	87 27 0·2	−15·152	−0·283			41485	314	7473			+ 2 4345	1612
1613	97·77	3	87 32 15·2	−15·153	−0·283			41486	315	7474			+ 2 4346	1613
1614	97·92	5	107 15 38·0	−15·172	−0·312	−0·013	2772	41474			5764	5814	−17 6245	1614
1615	98·68	3	89 3 47·5	−15·176	−0·285			41500	326				+ 0 4714	1615
1616	98·65	3	86 4 47·4	−15·191	−0·280			41508		7481			+ 3 4551	1616
1617	97·42	3	87 30 28·8	−15·222	−0·282			41533	347	7486		5823	+ 2 4348	1617
1618	97·43	3	87 39 40·3	−15·267	−0·281			41561	362	7492			+ 2 4350	1618
1619	98·41	3	88 44 52·0	−15·287	−0·282			41575	367	7494			+ 1 4471	1619
1620	00·73	3	89 53 51·8	−15·402	−0·280			41655	420		5783		− 0 4215	1620

1581. The Proper Motions have been specially computed for the present catalogue. 1591. The Proper Motion adopted is the mean of Porter and Boss. 1592. Authority for Proper Motions: Bossert.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1621	Aquarii	6·9	3	98·38	3	21 21 21·20	+3·0627	−0·0042	+0·0074	1621
1622	Equulei	6·7	...	97·08	3	21 22 17·45	+2·9991	−0·0026		1622
1623	Equulei	7·4	...	01·74	3	21 22 59·24	+3·0321	−0·0034		1623
1624	2 Pegasi	4·8	...	00·50	3	21 25 25·02	+2·7149	+0·0034	+0·0011	1624
1625	Equulei	7·3	1	98·37	3	21 26 16·15	+3·0237	−0·0031		1625
1626	22 Aquarii ... ... β	3·0	...	98·36	18	21 26 17·63	+3·1602	−0·0071	−0·0006	1626
1627	Equulei	7·7	1	96·79	3	21 28 9·47	+3·0135	−0·0028		1627
1628	Cygni	8·0*	...	01·73	3	21 29 31·62	+2·4333	+0·0067		1628
1629	Aquarii	6·7	1	98·08	3	21 29 37·48	+3·0530	−0·0038	−0·0003	1629
1630	Aquarii	7·4	2	98·68	3	21 30 17·38	+3·0652	−0·0042		1630
1631	72 Cygni	5·0	...	00·71	3	21 30 41·36	+2·4375	+0·0067	+0·0095	1631
1632	23 Aquarii ... ... ξ	4·8	...	98·23	12	21 32 25·70	+3·1898	−0·0082	+0·0058	1632
1633	Equulei	6·9	...	97·38	3	21 32 28·02	+3·0133	−0·0026		1633
1634	74 Cygni	5·0	...	99·72	3	21 32 56·31	+2·4022	+0·0073	−0·0010	1634
1635	4 Pegasi	6·3	1	98·40	3	21 33 31·38	+2·9985	−0·0022	+0·0056	1635
1636	25 Aquarii ... ... d	5·5	1	98·70	3	21 34 28·89	+3·0479	−0·0036	−0·0030	1636
1637	Aquarii	8·3	1	97·16	3	21 35 3·89	+3·1673	−0·0074		1637
1638	Pegasi	7·1	...	97·11	3	21 35 45·78	+3·0254	−0·0029		1638
1639	Pegasi	7·0	2	98·38	3	21 36 1·02	+3·0100	−0·0024		1639
1640	26 Aquarii	6·0	1	98·69	3	21 37 4·09	+3·0614	−0·0039	−0·0017	1640
1641	Pegasi	7·5	1	99·73	3	21 37 7·72	+3·0129	−0·0025		1641
1642	7 Pegasi	5·7	...	98·71	3	21 37 15·28	+3·0014	−0·0021	+0·0009	1642
1643	8 Pegasi ... ... ε	2·7	...	97·91	6	21 39 16·42	+2·9450	−0·0005	+0·0008	1643
1644	Pegasi	7·7*	...	97·38	3	21 39 44·39	+3·0387	−0·0031		1644
1645	11 Cephei	5·0	...	01·73	3	21 40 27·56	+0·8710	−0·0338	+0·0207	1645
1646	49 Capricorni ... ... δ	3·0	1	98·13	8	21 41 31·30	+3·2989	−0·0127	+0·0166	1646
1647	27 Aquarii	5·5	...	97·12	3	21 42 9·66	+3·0434	−0·0032	+0·0009	1647
1648	Pegasi	7·8*	...	00·71	3	21 44 50·10	+3·0110	−0·0021		1648
1649	Aquarii	9·3*	...	03·65	3	21 45 21·23	+3·1740	−0·0078		1649
1650	Aquarii	6·8	...	00·73	3	21 46 27·01	+3·0688	−0·0039		1650
1651	16 Pegasi	5·2	2	97·88	16	21 48 30·65	+2·7273	+0·0054	−0·0005	1651
1652	Aquarii	9·0*	...	95·72	4	21 50 9·07	+3·1169	−0·0056		1652
1653	Pegasi	7·1	...	00·72	3	21 50 33·64	+3·0491	−0·0032		1653
1654	Pegasi	7·4	1	96·77	3	21 52 28·33	+3·0273	−0·0023		1654
1655	Pegasi	7·6	2	00·74	3	21 53 26·90	+3·0323	−0·0025	−0·0185	1655
1656	Cephei	5·4	...	99·72	3	21 53 49·93	+1·6913	+0·0018		1656
1657	28 Aquarii	5·8	1	01·72	3	21 55 58·03	+3·0712	−0·0038	−0·0014	1657
1658	16 Cephei	5·1	...	99·71	3	21 57 49·31	+0·8910	−0·0376	−0·0144	1658
1659	Pegasi	7·5	2	99·74	3	21 58 23·41	+3·0140	−0·0016		1659
1660	22 Pegasi ... ... ν	5·4	1	96·76	3	22 0 38·17	+3·0196	−0·0017	+0·0049	1660
1661	34 Aquarii ... ... α	3·2	...	97·57	17	22 0 38·83	+3·0821	−0·0041	−0·0008	1661
1662	Pegasi	7·1	1	01·72	3	22 1 33·82	+3·0502	−0·0028		1662
1663	24 Pegasi ... ... ι	4·0	...	00·03	4	22 2 21·27	+2·7686	+0·0061	+0·0209	1663
1664	Pegasi	7·2	1	97·38	3	22 4 4·44	+3·0473	−0·0026		1664
1665	Pegasi	7·5	3	98·69	3	22 4 57·09	+3·0322	−0·0080		1665

1643. Reddish. 1661. Orange.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1621	98·38	3	89 19 29·1	−15·436	−0·279	+0·185		41685	433				+ 0 4726	1621
1622	97·08	3	85 2 28·4	−15·489	−0·271			41723	461	7506			+ 4 4675	1622
1623	01·74	3	87 15 13·6	−15·528	−0·273			41742	476	7507			+ 2 4362	1623
1624	01·83	8	66 47 58·6	−15·661	−0·241	−0·002	2798	41836				5871	+23 4325	1624
1625	98·37	3	86 37 16·7	−15·708	−0·267			41859	553	7528			+ 3 4568	1625
1626	98·10	3	96 0 40·3	−15·709	−0·280	+0·001	2797	41840			5805	5878	− 6 5770	1626
1627	96·79	3	85 52 46·3	−15·810	−0·264			41927	600	7535			+ 3 4575	1627
1628	01·73	3	51 54 58·7	−15·884	−0·210			42034					+37 4346	1628
1629	98·08	3	88 36 55·6	−15·889	−0·265	+0·004	2804	41991	645	7548			+ 1 4503	1629
1630	98·68	3	89 28 5·0	−15·924	−0·265			42026	664				+ 0 4750	1630
1631	00·40	3	51 54 51·0	−15·946	−0·209	−0·105	2809	42078				5909	+37 4359	1631
1632	97·07	3	98 18 10·1	−16·037	−0·273	+0·022	2808	42098			5832	5917	− 8 5701	1632
1633	97·38	3	85 45 59·4	−16·039	−0·257					7557			+ 4 4706	1633
1634	99·18	4	50 2 8·9	−16·063	−0·203	−0·009	2818	42169			5835	5924	+39 4612	1634
1635	98·40	3	84 40 46·2	−16·094	−0·254	−0·031	2813	42155	743	7562			+ 5 4834	1635
1636	98·70	3	88 12 22·3	−16·144	−0·257	+0·072	2817	42189	766	7565			+ 1 4517	1636
1637	97·16	3	96 49 17·7	−16·174	−0·266				777				− 7 5611	1637
1638	97·11	3	86 33 25·1	−16·210	−0·253				806	7576			+ 3 4599	1638
1639	98·38	3	85 25 59·0	−16·223	−0·251			42249	815	7577			+ 4 4722	1639
1640	98·69	3	89 10 12·4	−16·277	−0·254	+0·020	2822	42283	834				+ 0 4770	1640
1641	99·73	3	85 37 14·6	−16·280	−0·250			42287	841	7580			+ 4 4726	1641
1642	98·71	3	84 46 31·1	−16·287	−0·248	+0·005	2824	42295	847	7582			+ 5 4850	1642
1643	98·55	3	80 35 0·5	−16·389	−0·240	−0·011	2835	42370	898		5859	5986	+ 9 4891	1643
1644	97·38	3	87 28 1·4	−16·413	−0·248			42384		7593			+ 2 4404	1644
1645	01·01	11	19 8 56·6	−16·449	−0·066	−0·080	2856				5865	5997	+70 1193	1645
1646	01·11	3	106 34 51·3	−16·502	−0·266	+0·297	2847	42423			5871	5998	−16 5943	1646
1647	97·12	3	87 46 34·9	−16·534	−0·244	+0·010	2849	42461	962	7601			+ 2 4414	1647
1648	00·71	3	85 15 12·5	−16·665	−0·237			42551	1012	7624			+ 4 4753	1648
1649	03·65	3	97 46 51·6	−16·690	−0·249								− 7 5648	1649
1650	00·73	3	89 41 50·2	−16·743	−0·239			42600	1044		5893		+ 0 4787	1650
1651	00·05	3	64 32 43·4	−16·841	−0·209	+0·002	2864	42679			5899	6040	+25 4635	1651
1652	95·72	3	93 31 10·6	−16·919	−0·237			42716					− 3 5333	1652
1653	00·72	3	88 6 45·1	−16·938	−0·231			42723	1128	7644			+ 1 4560	1653
1654	96·77	3	86 19 3·5	−17·027	−0·226			42794	1175	7654			+ 3 4640	1654
1655	00·74	3	86 41 47·9	−17·072	−0·225	+0·158		42843	1200	7657			+ 3 4644	1655
1656	98·70	4	26 51 2·1	−17·090	−0·122						5918	6078	+62 2007	1656
1657	01·72	3	89 52 31·3	−17·187	−0·223	+0·001	2875	42913	1250		5923		− 0 4296	1657
1658	02·29	14	17 17 45·8	−17·269	−0·059	+0·176	2900				5931	6101	+72 1009	1658
1659	99·74	3	85 2 32·0	−17·295	−0·215			43002		7674			+ 4 4791	1659
1660	96·76	3	85 25 48·8	−17·393	−0·212	−0·107	2891	43065		7686		6117	+ 4 4800	1660
1661	97·54	4	90 48 19·8	−17·394	−0·216	−0·002	2890	43052	1345		5939	6118	− 1 4246	1661
1662	01·72	3	88 2 50·8	−17·434	−0·212					7695			+ 1 4584	1662
1663	99·98	4	65 8 35·8	−17·468	−0·191	−0·020	2899	43137			5950	6139	+24 4533	1663
1664	97·38	3	87 45 19·7	−17·541	−0·208			43190	16	7705			+ 2 4474	1664
1665	98·69	3	86 23 28·1	−17·578	−0·205			43220	33	7710			+ 3 4672	1665

1621, 1655. Authority for Proper Motions: Bossert.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1666	24 Cephei	5.0	...	00.72	3	22 7 53.26	+ 1.1567	− 0.0225	+ 0.0021	1666
1667	Aquarii	9.1	2	98.08	3	22 7 53.45	+ 3.2582	− 0.0123		1667
1668	Aquarii	7.4	2	99.74	3	22 8 12.60	+ 3.0755	− 0.0036		1668
1669	Pegasi	7.0	4	97.42	3	22 9 43.86	+ 3.0318	− 0.0017		1669
1670	Pegasi	7.6	4	01.72	3	22 10 35.69	+ 3.0322	− 0.0017		1670
1671	43 Aquarii ... ... θ	4.3	...	97.89	8	22 11 33.38	+ 3.1614	− 0.0075	+ 0.0057	1671
1672	Pegasi	7.3	2	97.16	3	22 12 27.40	+ 3.0236	− 0.0012		1672
1673	Lacertae	7.4	1	97.78	4	22 14 45.95	+ 2.3101	+ 0.0144		1673
1674	Pegasi	8.0	1	99.73	3	22 15 1.21	+ 3.0492	− 0.0022		1674
1675	30 Pegasi	5.4	...	97.74	3	22 15 25.61	+ 3.0182	− 0.0008	− 0.0010	1675
1676	48 Aquarii ... ... γ	3.8	...	97.53	8	22 16 29.43	+ 3.0920	− 0.0041	+ 0.0068	1676
1677	32 Pegasi	5.0	...	00.76	4	22 16 42.21	+ 2.7653	+ 0.0083	− 0.0001	1677
1678	52 Aquarii ... ... π	4.5	1	98.27	4	22 20 10.09	+ 3.0642	− 0.0027	− 0.0012	1678
1679	34 Pegasi	5.9	...	96.79	3	22 21 32.00	+ 3.0349	− 0.0012	+ 0.0171	1679
1680	35 Pegasi	5.0	1	96.83	3	22 22 47.69	+ 3.0324	− 0.0010	+ 0.0031	1680
1681	37 Pegasi	6.0	1	97.87	3	22 24 54.54	+ 3.0358	− 0.0011	− 0.0037	1681
1682	57 Aquarii ... ... σ	4.8	...	98.96	14	22 25 21.34	+ 3.1788	− 0.0087	− 0.0011	1682
1683	Pegasi	7.5	1	97.15	3	22 25 36.85	+ 3.0370	− 0.0011	− 0.0033	1683
1684	Pegasi	7.7*	...	97.39	3	22 27 16.77	+ 3.0537	− 0.0018		1684
1685	Pegasi	8.0*	...	96.80	3	22 27 41.67	+ 3.0499	− 0.0016	− 0.0050	1685
1686	Aquarii	7.0	...	99.74	3	22 29 28.98	+ 3.0720	− 0.0027	− 0.0040	1686
1687	Pegasi	8.5	1	00.76	3	22 30 11.75	+ 3.0241	− 0.0001		1687
1688	62 Aquarii ... ... η	4.1	...	98.34	9	22 30 13.03	+ 3.0784	− 0.0030	+ 0.0042	1688
1689	31 Cephei	5.2	...	02.77	3	22 33 17.88	+ 1.4452	− 0.0073	+ 0.0416	1689
1690	Pegasi	7.3	1	97.12	3	22 33 45.96	+ 3.0383	− 0.0006		1690
1691	Pegasi	7.8*	...	00.74	3	22 34 44.63	+ 3.0496	− 0.0012		1691
1692	Pegasi	7.0	2	96.82	3	22 35 22.61	+ 3.0385	− 0.0005	+ 0.0039	1692
1693	42 Pegasi ... ... ζ	3.6	...	98.38	10	22 36 28.43	+ 2.9861	+ 0.0024	+ 0.0044	1693
1694	43 Pegasi ... ... ο	4.8	...	01.76	3	22 37 3.61	+ 2.8127	+ 0.0105	− 0.0009	1694
1695	Pegasi	7.4	2	98.12	3	22 37 17.43	+ 3.0343	− 0.0002		1695
1696	Pegasi	6.9	3	98.39	3	22 37 49.10	+ 3.0363	− 0.0002		1696
1697	Aquarii	7.3	1	98.72	3	22 37 51.47	+ 3.0670	− 0.0020		1697
1698	44 Pegasi ... ... η	3.0	...	99.23	3	22 38 18.69	+ 2.8067	+ 0.0110	+ 0.0001	1698
1699	Pegasi	7.5	1	97.10	3	22 38 45.18	+ 3.0455	− 0.0007	+ 0.0100	1699
1700	Pegasi	7.4	1	97.13	3	22 40 16.74	+ 3.0475	− 0.0007		1700
1701	Aquarii	7.4	1	97.14	3	22 40 17.23	+ 3.0630	− 0.0017		1701
1702	Pegasi	7.5	1	97.12	3	22 42 26.13	+ 3.0311	+ 0.0004	+ 0.0030	1702
1703	Pegasi	7.3	3	98.10	3	22 43 51.39	+ 3.0440	− 0.0003	+ 0.0050	1703
1704	48 Pegasi ... ... μ	3.7	...	99.60	5	22 45 10.49	+ 2.8812	+ 0.0091	+ 0.0096	1704
1705	Pegasi	7.0	2	98.45	3	22 45 33.49	+ 3.0463	− 0.0003	− 0.0020	1705
1706	Pegasi	7.3	2	98.06	3	22 46 37.16	+ 3.0414	+ 0.0001		1706
1707	73 Aquarii ... ... λ	3.8	...	97.97	11	22 47 23.83	+ 3.1321	− 0.0062	− 0.0016	1707
1708	Pegasi	7.0	5	97.79	3	22 47 27.68	+ 3.0508	− 0.0005		1708
1709	Piscium	7.3	1	98.71	3	22 48 45.69	+ 3.0634	− 0.0012		1709
1710	1 Piscium	6.7	2	98.42	3	22 49 52.51	+ 3.0690	− 0.0016	+ 0.0003	1710

1673. A star (B.D. + 51° 3329), magnitude 8, follows about 27s, and is about 1′ north.
1696. Slightly reddish.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1666	01.53	9	18 9 4.9	−17.700	−0.072	+0.007	2932				5974	6180	+71 1111	1666
1667	98.08	3	106 27 1.7	−17.700	−0.216								−16 6043	1667
1668	99.74	3	90 15 9.9	−17.714	−0.203				98		5975		− 0 4322	1668
1669	97.42	3	86 12 52.2	−17.776	−0.197			43396		7732			+ 3 4687	1669
1670	01.72	3	86 13 32.6	−17.811	−0.195			43422	158	7736			+ 3 4689	1670
1671	99.71	3	98 16 52.0	−17.849	−0.202	+0.019	2929	43453	178		5989	6202	− 8 5845	1671
1672	97.16	3	85 21 18.1	−17.885	−0.192			43501	198	7744			+ 4 4837	1672
1673	97.78	4	37 50 42.1	−17.975	−0.142			43599				6218	+51 3324	1673
1674	99.73	3	87 43 9.3	−17.985	−0.189			43571	247	7748			+ 2 4493	1674
1675	97.74	3	84 42 46.7	−18.001	−0.186	+0.005	2941	43581	260	7750			+ 5 4998	1675
1676	98.77	3	91 53 28.8	−18.042	−0.189	−0.017	2943	43616	280		6004	6223	− 2 5741	1676
1677	98.73	4	62 10 23.0	−18.050	−0.168	+0.003	2946	43639			6005	6226	+27 4299	1677
1678	98.27	4	89 7 48.5	−18.180	−0.181	+0.004	2952	43752	377				+ 0 4872	1678
1679	96.79	3	86 6 59.1	−18.230	−0.177	−0.042	2957	43809	404	7771			+ 3 4705	1679
1680	96.83	3	85 48 21.0	−18.275	−0.174	+0.300	2959	43851	439	7776			+ 3 4710	1680
1681	97.87	3	86 4 34.5	−18.351	−0.171	+0.137	2965	43929	472	7780			+ 3 4713	1681
1682	99.92	5	101 11 22.4	−18.366	−0.178	+0.037	2966	43939	480		6040	6289	−11 5850	1682
1683	97.15	3	86 10 48.3	−18.376	−0.169	+0.044		43961	486	7789			+ 3 4716	1683
1684	97.39	3	87 55 36.4	−18.433	−0.167			44021		7796			+ 1 4623	1684
1685	96.80	3	87 30 26.7	−18.448	−0.166	+0.110		44040	529	7798			+ 2 4516	1685
1686	99.74	3	89 55 8.8	−18.508	−0.164	+0.080		44096	574		6052		− 0 4383	1686
1687	00.76	3	84 33 49.5	−18.532	−0.160				583				+ 5 5036	1687
1688	01.14	3	90 37 58.0	−18.533	−0.163	+0.053	2979	44131	582		6054	6330	− 0 4384	1688
1689	01.85	8	16 52 33.3	−18.634	−0.070	−0.023	2994				6065	6354	+72 1049	1689
1690	97.12	3	85 59 22.6	−18.649	−0.155			44266	665	7836			+ 3 4745	1690
1691	00.74	3	87 16 42.7	−18.681	−0.154			44309	686	7839			+ 2 4542	1691
1692	96.82	3	85 56 34.8	−18.701	−0.152	+0.159		44325	698	7842			+ 3 4751	1692
1693	01.72	3	79 41 26.5	−18.735	−0.147	+0.018	2992	44376	720		6075	6373	+10 4797	1693
1694	00.41	6	61 12 51.5	−18.754	−0.137	+0.031	2999	44411					+28 4436	1694
1695	98.12	3	85 20 57.7	−18.761	−0.148			44406	743	7851			+ 4 4894	1695
1696	98.39	3	85 33 17.5	−18.777	−0.147			44430	760	7855			+ 4 4896	1696
1697	98.72	3	89 18 20.5	−18.778	−0.149								+ 0 4912	1697
1698	00.54	3	60 18 6.2	−18.792	−0.134	+0.033	3003	44455			6085	6382	+29 4741	1698
1699	97.10	3	86 38 48.3	−18.805	−0.146	−0.330		44458	772	7859			+ 3 4763	1699
1700	97.13	3	86 50 7.0	−18.851	−0.143			44513	805	7869			+ 2 4555	1700
1701	97.14	3	88 46 17.9	−18.852	−0.144				804	7870			+ 0 4921	1701
1702	97.12	3	84 38 11.0	−18.915	−0.139	+0.070		44582	845	7881			+ 5 5077	1702
1703	98.10	3	86 14 2.0	−18.956	−0.137	+0.100		44631	874	7886			+ 3 4776	1703
1704	00.73	3	65 55 34.7	−18.993	−0.126	+0.042	3016	44667			6108	6430	+23 4615	1704
1705	98.45	3	86 27 35.8	−19.004	−0.134	+0.080		44672	908	7895			+ 3 4782	1705
1706	98.06	3	85 44 39.4	−19.033	−0.132			44712	925	7904			+ 4 4916	1706
1707	98.27	4	98 6 42.0	−19.054	−0.134	−0.040	3019	44728	931		6114	6441	− 8 5968	1707
1708	97.79	3	86 58 43.4	−19.056	−0.130			44743	938	7906			+ 2 4573	1708
1709	98.71	3	88 41 18.3	−19.091	−0.129			44782	967	7913			+ 1 4662	1709
1710	98.42	3	89 28 5.1	−19.121	−0.127	+0.005	3030	44824	988				+ 0 4939	1710

1683, 1702, 1705. Authority for Proper Motions: Boss. 1685, 1703. The Proper Motions have been specially computed for the present catalogue. 1686. Authority for Proper Motions: Radcliffe, 1890, 6052. 1692. Authority for Proper Motions: Bossert. 1699. Authority for Proper Motions: Porter.

No.	Constellation.		Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
							h. m. s.	s.	s.	s.	
1711	24 Piscis Australis	α	1·3	...	99·74	4	22 52 7·51	+3·2994	−0·0209	+0·0232	1711
1712	Piscium	...	6·3	1	96·79	3	22 52 27·26	+3·0505	−0·0001		1712
1713	Piscium	...	7·3	...	97·13	3	22 54 14·15	+3·0474	+0·0003		1713
1714	2 Piscium	...	6·0	1	98·11	3	22 54 19·93	+3·0699	−0·0014	+0·0039	1714
1715	Piscium	...	7·7	1	97·46	3	22 54 54·82	+3·0424	+0·0007		1715
1716	Piscium	...	6·0	...	97·78	3	22 55 37·10	+3·0567	−0·0003	−0·0001	1716
1717	Piscium	...	7·2	1	98·73	3	22 56 34·07	+3·0476	+0·0004	+0·0006	1717
1718	Piscium	...	6·7	1	98·75	3	22 56 37·94	+3·0536	0·0000	+0·0010	1718
1719	4 Piscium	β	4·6	...	96·81	3	22 58 47·20	+3·0525	+0·0002	−0·0003	1719
1720	54 Pegasi	α	2·6	...	99·54	8	22 59 46·68	+2·9818	+0·0058	+0·0028	1720
1721	Piscium	...	7·0	1	98·08	3	23 0 10·52	+3·0681	−0·0010		1721
1722	86 Aquarii	c^1	4·7	...	94·84	3	23 1 18·56	+3·2255	−0·0157	+0·0039	1722
1723	Piscium	...	7·0	2	98·11	3	23 1 56·45	+3·0580	0·0000		1723
1724	Piscium	...	7·5	2	98·74	3	23 2 58·33	+3·0478	+0·0010		1724
1725	5 Piscium	A	5·6	...	97·31	4	23 3 33·54	+3·0637	−0·0004	+0·0075	1725
1726	33 Cephei	π	4·6	...	01·54	3	23 4 43·07	+1·8935	+0·0244	+0·0038	1726
1727	Piscium	...	6·7	1	96·82	3	23 6 9·12	+3·0484	+0·0012		1727
1728	Piscium	...	8·0*	...	98·11	3	23 8 34·51	+3·0641	−0·0001		1728
1729	Piscium	...	6·9	...	96·86	3	23 8 55·40	+3·0497	+0·0014		1729
1730	Piscium	...	7·5	1	01·78	3	23 10 32·03	+3·0689	−0·0004	+0·0124	1730
1731	6 Piscium	γ	4·0	1	99·05	15	23 11 58·83	+3·0594	+0·0006	+0·0487	1731
1732	Aquarii	...	9·5	1	98·14	3	23 12 11·88	+3·0997	−0·0037		1732
1733	7 Piscium	b	5·4	2	96·85	3	23 15 14·70	+3·0508	+0·0019	+0·0032	1733
1734	Aquarii	...	7·0	1	95·08	4	23 16 12·21	+3·0959	−0·0033		1734
1735	Piscium	...	7·8*	...	96·79	3	23 17 46·73	+3·0630	+0·0007		1735
1736	Piscium	...	6·7	...	97·16	3	23 19 10·40	+3·0596	+0·0013		1736
1737	Piscium	...	7·3	1	97·49	3	23 21 37·09	+3·0652	+0·0008		1737
1738	8 Piscium	κ	4·9	...	98·62	12	23 21 48·32	+3·0700	+0·0001	+0·0041	1738
1739	Piscium	...	6·4	...	98·17	3	23 22 7·33	+3·0705	+0·0001		1739
1740	70 Pegasi	q	4·7	...	00·47	3	23 24 5·76	+3·0276	+0·0061	+0·0013	1740
1741	Piscium	...	7·2	1	97·77	3	23 25 7·63	+3·0569	+0·0022		1741
1742	Piscium	...	7·1	...	98·79	3	23 25 59·30	+3·0665	+0·0009		1742
1743	Cephei	...	9·5*	...	01·22	3	23 27 3·16	+1·7606	+0·0304		1743
1744	Cephei	...	9·5*	...	01·22	3	23 27 15·36	+1·7672	+0·0310		1744
1745	Cephei	...	5·6	...	00·70	4	23 27 48·92	−0·2286	−0·5974	+0·0875	1745
1746	Piscium	...	8·0*	...	97·47	3	23 28 16·97	+3·0596	+0·0020		1746
1747	Piscium	...	7·3	1	97·16	3	23 29 18·48	+3·0574	+0·0027		1747
1748	15 Piscium	...	7·0	1	98·44	3	23 30 21·78	+3·0704	+0·0006	−0·0049	1748
1749	Piscium	...	8·0*	...	02·82	3	23 30 59·15	+3·0651	+0·0016		1749
1750	16 Piscium	...	5·7	...	97·51	3	23 31 16·99	+3·0682	+0·0011	−0·0091	1750
1751	17 Piscium	ι	4·3	...	98·21	10	23 34 48·33	+3·0597	+0·0031	+0·0234	1751
1752	35 Cephei	γ	3·5	...	01·30	3	23 35 14·41	+2·4446	+0·0773	−0·0199	1752
1753	18 Piscium	λ	4·6	...	97·49	3	23 36 56·52	+3·0698	+0·0012	−0·0107	1753
1754	78 Pegasi	...	5·1	...	02·51	3	23 38 57·56	+3·0053	+0·0164	+0·0053	1754
1755	19 Piscium	...	5·4	...	97·11	3	23 41 16·85	+3·0671	+0·0024	−0·0090	1755

1712, 1716. Reddish. 1723. B.D. magnitude, 8·2; Albany, 7·1. 1731. Orange. 1741. The sign of the Declination in W.B. (1) for this star should be changed. 1755. Red.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A.G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1711	99.74	4	120 9 8.3	−19.179	−0.132	+0.159	3032	44866			6140	6477		1711
1712	96.79	3	86 43 31.4	−19.187	−0.121			44887	1042	7923			+ 3 4799	1712
1713	97.13	3	86 10 30.3	−19.232	−0.118			44939	1081	7933			+ 3 4805	1713
1714	98.11	3	89 34 15.1	−19.235	−0.118	+0.074	3036	44946	1084		6150		+ 0 4950	1714
1715	97.46	3	85 22 34.8	−19.249	−0.116			44966	1096	7935			+ 4 4935	1715
1716	97.78	3	87 31 20.9	−19.266	−0.115	+0.078		44993	1115	7938			+ 2 4594	1716
1717	98.73	3	86 4 24.1	−19.289	−0.113	+0.133		45030	1138	7946			+ 3 4814	1717
1718	98.75	3	87 0 17.8	−19.291	−0.113	+0.043	3041	45032	1140	7948			+ 2 4597	1718
1719	96.81	3	86 43 7.2	−19.341	−0.109	+0.015	3046	45105	1188	7957	6171	6525	+ 3 4818	1719
1720	00.73	3	75 19 58.1	−19.364	−0.105	+0.030	3050	45148	1216		6174	6531	+14 4926	1720
1721	98.08	3	89 13 54.5	−19.373	−0.107			45163	1220				+ 0 4963	1721
1722	94.84	3	114 17 0.4	−19.398	−0.111	−0.002	3053	45184			6184			1722
1723	98.11	3	87 29 19.7	−19.412	−0.103			45206	1257	7976			+ 2 4609	1723
1724	98.74	3	85 40 1.0	−19.435	−0.101			45251	1275	7981			+ 4 4963	1724
1725	97.31	4	88 24 59.5	−19.447	−0.101	−0.119	3059	45279	1287	7986			+ 1 4686	1725
1726	02.56	9	15 9 11.6	−19.472	−0.058	+0.041	3074	45381				6561	+74 1006	1726
1727	96.82	3	85 32 19.1	−19.501	−0.095			45366	48	8002			+ 4 4975	1727
1728	00.55	6	88 20 29.3	−19.550	−0.091			45451		8017			+ 1 4696	1728
1729	96.86	3	85 32 49.5	−19.556	−0.090			45471	111	8021			+ 4 4985	1729
1730	01.78	3	89 14 8.7	−19.587	−0.087	+0.030		45525	145				+ 0 4982	1730
1731	97.98	5	87 15 51.0	−19.614	−0.084	−0.017	3082	45565	176	8036	6225	6600	+ 2 4648	1731
1732	98.14	3	95 34 4.1	−19.618	−0.085								− 5 5962	1732
1733	96.85	3	85 9 51.3	−19.671	−0.078	+0.074	3092	45687	257	8053			+ 4 4997	1733
1734	95.08	4	95 13 11.2	−19.687	−0.077				280		6243		− 5 5973	1734
1735	96.79	3	87 43 48.0	−19.713	−0.073			45781	310	8064			+ 2 4660	1735
1736	97.16	3	86 49 58.0	−19.735	−0.071			45846	335	8068			+ 2 4663	1736
1737	97.49	3	88 4 19.9	−19.772	−0.066			45894	383	8076			+ 1 4724	1737
1738	00.05	7	89 17 30.1	−19.774	−0.066	+0.102	3116	45895	388		6263	6659	+ 0 4998	1738
1739	98.17	3	89 25 36.0	−19.779	−0.065			45905	392				+ 0 4999	1739
1740	00.12	3	77 47 27.7	−19.807	−0.060	−0.030	3122	45974				6670	+11 5009	1740
1741	97.77	3	85 32 21.3	−19.820	−0.059			46009	455	8085			+ 4 5016	1741
1742	98.79	3	88 11 12.1	−19.832	−0.058			46045	473	8090			+ 1 4731	1742
1743	01.22	3	8 18 18.6	−19.845	−0.028								+81 824	1743
1744	01.22	3	8 17 39.9	−19.848	−0.028								+81 825	1744
1745	01.80	7	3 14 38.8	−19.855	+0.013	−0.004	3147				6294	6693	+86 344	1745
1746	97.47	3	85 54 44.6	−19.860	−0.053			46138	527	8102			+ 3 4870	1746
1747	97.16	3	85 4 55.2	−19.873	−0.051			46169	547	8111			+ 4 5029	1747
1748	98.44	3	89 14 21.2	−19.885	−0.049	+0.031	3138	46212	574				+ 0 5018	1748
1749	02.82	3	87 24 2.0	−19.892	−0.048				589	8120			+ 2 4686	1749
1750	97.51	3	88 27 9.6	−19.895	−0.047	−0.061	3139	46248	599	8121			+ 1 4744	1750
1751	98.69	6	84 54 56.3	−19.931	−0.040	+0.443	3148	46351	667	8132	6318	6731	+ 4 5035	1751
1752	02.21	9	12 55 32.9	−19.935	−0.030	−0.135	3152	46419			6319	6736	+76 928	1752
1753	97.49	3	88 46 13.1	−19.951	−0.036	+0.137	3153	46445	711	8141	6328	6745	+ 0 5037	1753
1754	00.09	3	61 11 32.5	−19.968	−0.032	+0.034	3160	46504			6336	6755	+28 4627	1754
1755	97.11	3	87 4 5.1	−19.985	−0.028	+0.023	3162	46575	792	8154		6764	+ 2 4709	1755

1716. Authority for Proper Motions: Boss. 1717. The Proper Motion adopted is the mean of Boss and Bossert. 1730. Authority for Proper Motions: Bossert.

No.	Constellation.	Magnitude.	Number of Estimations.	Mean Year and Fraction of Year.	Number of Observations.	Mean R.A.	Precess.	Sec. Var.	Proper Motion.	No.
						h. m. s.	s.	s.	s.	
1756	Cephei	10·0	...	98·04	3	23 42 8·65	+2·7460	+0·0747		1756
1757	Piscium	7·2	2	98·44	3	23 43 42·17	+3·0700	+0·0019	−0·0013	1757
1758	Sculptoris ... ... δ	4·6	...	02·87	3	23 43 43·05	+3·1246	−0·0159	+0·0067	1758
1759	Piscium	8·7*	...	01·50	3	23 43 58·82	+3·0697	+0·0020	+0·0646	1759
1760	21 Piscium	5·6	...	97·84	3	23 44 20·20	+3·0719	+0·0013	−0·0016	1760
1761	Piscium	7·7	1	96·88	3	23 45 59·60	+3·0703	+0·0020		1761
1762	Piscium	7·5	1	99·81	4	23 46 33·42	+3·0671	+0·0033		1762
1763	Piscium	7·2	2	98·92	3	23 46 46·57	+3·0671	+0·0033		1763
1764	22 Piscium	5·8	...	97·88	3	23 46 50·63	+3·0695	+0·0024	0·0000	1764
1765	25 Piscium	6·2	...	97·96	3	23 47 57·40	+3·0708	+0·0020	−0·0015	1765
1766	Piscium	7·8*	...	98·82	3	23 49 11·94	+3·0693	+0·0029		1766
1767	Piscium	8·0	1	98·92	4	23 49 18·20	+3·0706	+0·0023		1767
1768	Piscium	6·9	...	97·45	3	23 51 39·90	+3·0692	+0·0036		1768
1769	84 Pegasi... ... ... ψ	4·8	...	01·50	3	23 52 39·69	+3·0532	+0·0151	−0·0043	1769
1770	28 Piscium ... ... ω	4·0	...	99·14	10	23 54 10·48	+3·0690	+0·0049	+0·0087	1770
1771	Piscium	7·5	2	96·82	3	23 57 39·34	+3·0723	+0·0026	+0·0023	1771
1772	2 Ceti	4·5	...	99·99	9	23 58 37·02	+3·0753	−0·0078	−0·0001	1772

1756. The magnitude given above is only approximate.

No.	Mean Year and Fraction of Year.	Number of Observations.	Mean N.P.D.	Precess.	Sec. Var.	Proper Motion.	Auwers' Bradley, 1755.	Lalande, 1800.	Weisse's Bessel (1), 1825.	Albany (A. G.), 1875.	Radcliffe, 1890.	Greenwich, 1890.	B.D.	No.
			° ′ ″	″	″	″							°	
1756	98·04	3	17 39 39·8	−19·991	−0·023									1756
1757	98·30	4	88 20 25·7	−20·001	−0·023	+0·021		46646	850	8162	6358		+ 1 4773	1757
1758	02·87	3	118 40 58·9	−20·002	−0·024	+0·110		46641			6359	6775		1758
1759	01·79	3	88 7 40·2	−20·003	−0·023	+0·959		46650	853	8164			+ 1 4774	1759
1760	97·84	3	89 28 43·9	−20·005	−0·022	+0·030	3167	46667	861		6361	6778	+ 0 5054	1760
1761	96·88	3	88 19 6·5	−20·015	−0·019			46711	884	8176			+ 1 4786	1761
1762	00·87	6	85 51 32·0	−20·018	−0·018			46737	894	8177			+ 3 4899	1762
1763	98·92	3	85 48 39·2	−20·019	−0·017			46742	898	8178			+ 3 4900	1763
1764	97·88	3	87 37 32·3	−20·019	−0·017	+0·011	3174	46744	900	8179	6372		+ 2 4725	1764
1765	97·96	3	88 27 55·5	−20·024	−0·015	+0·005	3180	46788		8183		6797	+ 1 4792	1765
1766	98·82	3	86 52 37·6	−20·030	−0·013				956	8192			+ 2 4728	1766
1767	98·92	3	88 5 28·6	−20·030	−0·012			46843		8193			+ 1 4799	1767
1768	97·45	3	85 49 53·9	−20·039	−0·008			46926	1006	8205			+ 3 4909	1768
1769	01·59	5	65 24 52·0	−20·042	−0·006	+0·024	3186	46965				6831	+24 4865	1769
1770	99·49	3	83 41 24·9	−20·046	−0·003	+0·108	3191	47017	1062		6399	6850	+ 6 5227	1770
1771	96·82	3	88 25 27·6	−20·051	+0·004	+0·071		47148	1143	8232			+ 1 4820	1771
1772	00·87	3	107 53 32·6	−20·052	+0·006	−0·005	3204	47179			6414	6877	−18 6417	1772

1757. Authority for Proper Motions: Auwers (Mayer's Sternverzeichnis). 1758. Authority for Proper Motions: Auwers (Astronomische Nachrichten, 3929). 1759. The Proper Motion adopted is the mean of Boss and Bossert. 1771. Authority for Proper Motions: Boss.